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GRAY'S

SUPPLEMENT TO THE PHARMACOPŒIA.

BY PROFESSOR REDWOOD.

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GRAY'S

SUPPLEMENT TO THE PHARMACOPŒIA;

BEING

A CONCISE BUT COMPREHENSIVE

DISPENSATORY

AND

MANUAL OF FACTS AND FORMULÆ,

FOR THE

CHEMIST AND DRUGGIST AND MEDICAL PRACTITIONER.

Entirely Re-written, Re-arranged, and considerably Enlarged,

BY THEOPHILUS REDWOOD,

PROFESSOR OF PHARMACY TO THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

LONDON:
LONGMAN & CO.; SIMPKIN & CO.; SHERWOOD & CO.;
JOHN CHURCHILL; HENRY BOHN; AND
HENRY RENSHAW.
1847.

LONDON:
G. J. PALMER, SAVOY STREET, STRAND.

PREFACE.

In preparing this edition of *Gray's Supplement to the Pharmacopœia*, for the proprietors, I have endeavoured to fulfil the objects contemplated by the original author, but have found it necessary to make considerable alterations in the matter and arrangement of the work, in order to reconcile it with the present state of knowledge, and to adapt it to the altered circumstances of the class of readers for whom it is principally designed.

Mr. Gray, in his preface to the first edition, published in 1818, says :—"The intention of the present work is to give a concise account of the actual state of our knowledge of drugs in general, using that term in its most extensive signification, as including not only those natural substances and compounds which are employed by physicians and private practitioners of medicine, but those other substances and compounds which, from their analogy to these, are usually sold by the same retailers as sell medicines, for the purpose of being used as dyes, paints, perfumes, cosmetics, liqueurs, &c. ; and upon this account the work appears under the title of *A Supplement to the Pharmacopœia*, as that book contains only the medicines in use at present with the physicians of London and its environs. Still, however, the medicines form the greater bulk of the work, from the vast variety of them that are employed in different places."

Adopting the design above expressed, and using as much of the matter of previous editions as I considered useful, yet omitting much, and adding still more, I have entirely rewritten and rearranged the work.

The long preface appended to former editions is, in this, replaced by a brief chronological history of Pharmacopœias and Dispensatories.

The articles on weights and measures, specific gravities, thermometrical scales, &c., have been much amplified, and several tables for facilitating calculations, some of which have been prepared expressly for the work, are added.

The table of the solubility of salts, which is now introduced, the glossary of terms used in prescriptions, and the pharmaceutical calendar, have been rendered as complete as the means at my command have enabled me to make them. The first of these is founded on a table of a similar description in Dr. Ure's Dictionary of Chemistry, to which the results of recent investigations have been added, but further experiments are still required to furnish data for filling up many deficiencies.

In the part which treats of "Animals yielding products employed in medicine, domestic economy, and the arts," about three hundred animals are described, which are arranged according to Cuvier's classification. Some of the characters, the habitations, food, and useful products of these are briefly noticed, and an outline of Cuvier's classification of the animal kingdom, with some allusions to modifications of it adopted by other naturalists, is given.

Among the "vegetables yielding products employed in medicine, domestic economy, and the arts," are included nearly three thousand plants. These are arranged after De Candolle's classification, and reference is given, for all the genera, to the *Prodromus* (De Cand.), or *Botanicon Gallicum* (De Cand. Bot. Gal.), of that author, to *Endlicher's Genera plantarum* (Endl. Gen. Pl.), to *Smith and Hooker's English Flora* (Smith Eng. Fl.), or to *Lindley's works* (Lindl. or L.). Reference is also frequently made to *Sowerby's English Botany*. (E. B.), where drawings of the plants may be found. Those plants which grow wild in this country are distinguished by having an asterisk (*) prefixed to the name, and those which are commonly cultivated in this country, but are not natives, are distinguished by two asterisks (**). The habitat of nearly every plant is given, and to those which grow in this country, the period of inflorescence, and colour of the flowers, are also added. The introduction of these facts and references, and the adoption of De Candolle's classification, give an entirely new character to this part of the work. The notices of the applications and uses of the plants or their products are necessarily brief, in accordance with the scope and purpose of the work; they are given on the authority of the writers to whom reference is made, by the letters G. (Gray), L. (Lindley), O'Sh. (O'Shaughnessey), Loud. (Loudon), or, in other cases, by the name in full.

The last part of the work comprehends the Formulæ for the preparation of compounds employed in medicine, domestic economy, and the arts, together with mineral substances, and some animal and vegetable products. Besides all the formulæ of the three British Pharmacopœias, a selection is here given from the foreign Pharmacopœias of various parts of the world, with the view of comprising those authorized processes most likely to prove useful to the prescriber or dispenser of medicines in this country. To these formulæ, the authorization of which is indicated by explicit reference to the sources from whence they are derived, are added a great number of others for the preparation of substances either sold or used by the class of persons for whom the book is intended; many of these are now published for the first time, and relate to compounds for which there have hitherto been no good published formulæ. An alphabetical arrangement has been adopted in this part of the work, as that best adapted to the nature of the matter.

Finally, much pains have been taken in endeavouring to make the index complete and correct.

T. R.

19, Montague Street, Russell Square,
February, 1847.

A

SUPPLEMENT TO THE PHARMACOPŒIA,

&c.

PHARMACOPŒIAS AND DISPENSATORIES.

When physicians ceased to prepare the medicines which they prescribed for their patients, and pharmacy became, to a certain extent, a distinct profession or business, it was necessary that some authorized standards should be fixed upon, by which to determine the meaning and value of the terms employed in extemporaneous prescriptions. Hence the origin of Pharmacopœias. These works emanate from that portion of the medical profession which consists of prescribers of medicines—in this country, the Colleges of Physicians. They contain descriptive notices of the medicines employed by medical men, together with formulæ for those compounds, which admit of being kept ready made, and the preparation of which occupies more time than would be compatible with the speedy administration of the remedy when ordered. A pharmacopœia is, in fact, intended to serve the two-fold purpose, of a register of approved and established remedies, which the physician employs in the treatment of disease, and a key or index, by which the pharmaceutist or dispenser of medicines can interpret the terms by which these remedies are distinguished and ordered.

The separation of pharmacy from the practice of medicine, is supposed to have taken place first, in Arabia. It is here that the occupation of a pharmaceutist appears to have been first recognized by law as a distinct and separate branch of the medical profession. Establishments for dispensing medicines, existed at Cordova, Toledo, and other large towns under the dominion of the Arabs, prior to the twelfth century, and all establishments of this description were placed under severe legal restrictions. From these regulations, the Emperor Frederick II. is said to have copied the principal articles of the law passed in 1233, and which remained in force for a long time in the two Sicilies, with reference to the practice of pharmacy.* According to this law, every medical man was required to give information against any pharmaceutist who should sell bad medicines. The pharmaceutists were divided into two classes: 1st., the *Stationarii*, who sold simple medicines, and *non magistral* preparations, according to a tariff settled by competent authorities; 2ndly, the *Confectionarii*, whose business consisted in scrupulously dispensing the prescriptions of the medical men. All these pharmaceutical establishments were placed under the surveillance of a College of Medicine.†

During the thirteenth, fourteenth, and fifteenth centuries, apothecaries' shops, or dispensaries, were established in most of the large cities in France and Germany; and these, in the first instance, were often fitted up and supported at the public expense. A garden was also, in these cases, often appropriated to the apothecary, for the cultivation of such indigenous plants as he required.

In 1345, King Edward III. gave a pension of sixpence a day to Coursus de Gangland, an apothecary in London, for taking care of, and attending his majesty during his illness in Scotland. But it is probable that apothecaries were not common in England at this period.

We are informed by Saladin, a writer of the fifteenth century, that at that time the only books referred to by the apothecaries, as authorities with reference to the preparation of medicines, were, the works of Avicenna; the treatise on Simple and Compound medicines, by Serapion; a treatise on Synonemes, and the Quid pro Quo on Substitutes, by Simon; the Liber Servatoris, of Bulchasin Ben Aberazerin, treating of the preparation of plants and animals, and the chemical remedies then in use; the Antidotarium, of Johannes Damascenus, or Mesue; and the Antidotarium of Nicolaus de Salerno.

The last-named author, who was director of the school at Salernum, a city in the kingdom of Naples, lived about the middle of the twelfth century. In his *Antidotarium*, or *Isagogica introductio in artem Apothecariatus*, he described a great number of medicines, principally taken from the Arabs. He must not be confounded, as he has been by some writers, with Nicolas Prevost, called Præpositus, of Tours, whose Dispensatory was published in 1488, and subsequent editions of it in 1505, 1564, and 1582. This work is considered to have been the first of the kind circulated in Europe.

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* Hoefer, Histoire de la Chimie depuis les temps les plus reculés jusqu'a notre époque. 1842.

† Constitutiones Neapolitanæ et Siculæ liii., tit. xxxiv., 1, 2, apud Lindenborg., Cod. legum antiquarum; Francf., 1613, in fol.

Many of the remedies introduced into medicine about this period, owed their origin to the investigations of the alchemists, who were engaged in the futile endeavour to discover the philosopher's stone, and the universal remedy for all diseases of the body.

Raymond Lully, of Majorca, was one of the principal writers of this school. He was born in the year 1235, and died in Africa in 1315. He is said to have written about sixty volumes on subjects connected with chemistry. Among these were his works, *de Lapide Aurifico ; de Quinta Essentia ; de Accurtatione Lapidis Philosophorum ; Lux Mercuriorum*, &c.

Basil Valentine, born 1394, contributed greatly by his writings, to the introduction of chemical remedies in the practice of medicine. One of the most celebrated of his works, was the *Currus triumphalis Antimonii.*

The efforts made by Basil Valentine to introduce chemical agents, derived from the mineral kingdom, in the treatment of disease, were subsequently followed up by his successor, Paracelsus, who was born in 1493.

At this period, the number of pharmaceutical establishments in France, Germany, and Italy, which had previously been very limited, began to increase. The proprietors of the establishments, however, were but little acquainted with the art of compounding medicines, and therefore the most important remedies were often prepared in the presence of the medical men by whom they were prescribed.[*] *Chemical remedies*, in the sense in which this term was then employed, were but seldom obtained from the apothecary's shop, such being prepared and supplied by a distinct class of men, who were professed chemists. Paracelsus and his followers, anxious for the introduction of chemical remedies, loudly complained of the ignorance and incompetency of the pharmaceutists, and ascribed to this cause, in a great measure, the strong hold which the advocates for Galenical medicines still retained on the confidence of the public.

In 1524, the Dispensatory of Valerius Cordus was published under the sanction of the senate of Nuremberg. This is considered to have been the first authorized Dispensatory or Pharmacopœia published in Europe. Subsequent editions appeared in 1535, (*Dispensatorium Pharmacorum omnium ; Nuremb.* 1535,) and 1542. This work, like that of Nicholas Prevost, was principally compiled from the *Antidotarium* of Mesue, and of Nicolaus de Salerno.

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[*] *Lisetti Benanci*, Declaratio fraudum et errorum apud pharmacopœos commissorum Acced. ejusd. argumenti dialogus, *Lodetti.* Turon, 1553.

In 1538, the medical men of Augsburg, in Germany, formed a sort of Pharmacopœia, the formulæ contained in which, were generally adopted in that place.* Augsburg was then a place of great trade, especially with Italy, from whence, it is probable, the regulations connected with the practice of medicine were introduced. The work thus commenced was subsequently published in a more mature form in 1601, under the title of *Pharmacopœia Augustana.* The seventh edition appeared in 1622.

The following works were published during the sixteenth century:—Bretschneider's *Pharmacopœia in compendium redacta;* Antw. 1560. Foe's *Pharmacopœia;* Basil. 1561. Collado's *Pharmacorum omnium, quæ in usu sunt apud nostros pharmacopœos enumeratio;* Valentiæ, 1561. Fuch's *Pharmacorum omnium, quæ in communi sunt practicantium usu;* Paris, 1569. Maselli's *Pharmacopœia Bergamensis;* Bergam. 1580. Nuck's *Pharmacopœia;* Amsterd. 1580. Bauderon's *Paraphrase sur la Pharmacopée;* Lyon, 1588.

Fernel and Sylvius also wrote in the sixteenth century.

In the years 1514, 1516, 1520, 1571, 1583, and 1594, laws were passed for the regulation of the practice of Pharmacy in France.

The first *Pharmacopœia of the London College of Physicians,* appeared in May, 1618. This was circulated among the members of the college, and the London apothecaries, but was found to be so imperfect, that the greater part of the edition was cancelled, and a new edition issued in the following December.

The first *Pharmacopœia of Amsterdam,* was published in 1636. New editions appeared in 1639, 1682, 1701, 1714, and 1792.

The *Parisian Codex,* or *French Pharmacopœia,* was first issued in 1639. In the year 1590, the parliament had decreed, with a view to the public good, that the faculty of medicine should elect a committee of their body for the purpose of preparing a DISPENSATORY *containing the simple and compound medicines which the apothecaries of Paris ought to keep in their shops.* This decree remained unexecuted, and parliament, in 1597, named twelve members of the faculty of medicine, who were enjoined to prepare a Dispensatory. Notwithstanding this, and that a fresh injunction was issued in the succeeding year, the *Codex* did not appear until 1639, in compliance with a new order from Louis XIII. New editions of the Codex were published in 1645, 1732, 1748, and 1758, which was the last published before the revolution.†

The Pharmacopœia of Lille, was published in 1640, and again in 1694, and 1772. This was chiefly an abridgment of the Paris Codex.

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* Conclusiones et propositiones universum medicinam per genera complectentes. *Augusta Vindelicorum,*1558.

† Guibourt, Traite de Pharmacie. 1841.

The London Pharmacopœia, which had first appeared in 1618, and had undergone slight alterations and improvements in subsequent editions of 1621, 1632, and 1639, was remodelled in 1650. In this edition, the names of the original authors of the several formulæ, which had previously been inserted, were omitted. Several new formulæ were added, and some of the old ones left out. Similar alterations were again made in 1677. An excellent formula for *Usquebach, sive aqua vitæ, Hibernis popularis,*" was inserted in this edition, (see formulæ,) and several other equally important additions were made. The next material change was made in 1721, under the presidency of Sir Hans Sloane; when, for the first time, the botanical names of the vegetables included in the Materia Medica, were given; it being stated in the preface, "*The catalogue of simples has been drawn up entirely de novo: the name of each plant, and in some cases there is more than one, has been annexed; as well the officinal name, as that which is retained by the more accurate botanists. Those who know how easily plants of the same genus and name may be confounded, must clearly see that errors could scarcely have been avoided in any other way, than by employing this distinction of terms.*" This was the first step towards a scientific improvement in the work; in other respects, however, it still retained its original character, the great majority of the formulæ remaining unaltered, although a few of the obsolete ones were omitted. Among other changes, "Saccharum Hordeatum" (*barley-sugar*) was substituted for "Saccharum Penidium," (*toffy*).

At this period, a "more correct and concise method of prescribing,"* began to prevail among the most eminent of the physicians, with whom the old-fashioned formulæ, lengthened out with redundancy of heterogeneous and often incompatible ingredients, had fallen into disuse; and a desire soon prevailed for effecting a more radical reformation in the Pharmacopœia than had hitherto been attempted. Most of the formulæ adopted by the London College, even those of the Pharmacopœia of 1721, were taken from the works of Mesué, Nicolaus, Renodius, Fernel, and authors of this class, with reference to which formulæ, the College, in the preface to their Pharmacopœia of 1746, state: "It were certainly a disgrace, and just reproach, if pharmacy should any longer abound with those inartificial and irregular mixtures, which the ignorance of the first ages introduced, and the perpetual fear and jealousies of poisons enforced; against which the ancients endlessly busied themselves in the search of antidotes, which for the most part they superstitiously and doatingly derived from oracles, dreams, and astrological fancies; and vainly hoping to frame compositions, that might singly prevail against every species of poison, they amassed together whatever they had imagined to be endued with alexipharmic powers. By this procedure, the simplicity of physic was lost, and a wantonness in mixing, enlarging, and accumulating took place, which has continued even to our times." The celebrated mithridate and theriaca, may be instanced in illustration of the foregoing statement, these medicines being said to contain the proper antidote against every possible species of poison. Nor was this redundancy of composition confined to such medicines as the above; the same feature pervaded nearly the whole of the formulæ of the early pharmacopœias. One of the old Paris Pharmacopœias contained a formula for a plaster, (emplastrum diabotonon,) consisting of sixty ingredients, and for a distilled water, (aqua generalis,) consisting of more than 120 ingredients. Previous to the publication of the Pharmacopœia of 1746, the London College appointed a committee of their body for the purpose of suggesting such alterations as were thought desirable to be made. This committee appear to have entered upon their work with a determination of founding the formulæ upon the principles of simplicity. A most radical change was recommended by the committee and carried out by the College. The arrangement of the work was entirely recast; nearly the whole of the old prolix formulæ were rejected, and those which were substituted for them may be said to have originated and formed the bases of the medicinal compounds which have chiefly been employed in this country from that day to the present. Dr. Plumtre was president of the college at the time this Pharmacopœia was published.

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* Preface to the London Pharmacopœia. 1746.

In 1788, a further change was made, and as that which had taken place in 1746 related chiefly to what are called the Galenical preparations, so this for the most part had reference to the chemical. Subsequent changes have been made in 1809, 1824, and 1836, the last date being that of our present Pharmacopœia, which is decidedly superior to any that has preceded it.

The Edinburgh Pharmacopœia was first published in 1699. Subsequent editions or republications have appeared in 1722, 1736, 1744, 1756, 1774, 1783, 1792, 1803, 1804, 1806, 1813, 1817, 1839, 1841.

The first Dublin Pharmacopœia was published in 1807. Previous to this time, however, in the year 1794, a *Specimen Pharmacopœiæ* had been circulated among the members of the college, and another in 1805. The preparation of these works had been chiefly committed to Dr. Percival.* A new Dublin Pharmacopœia was brought out in 1826, which is the last that has been published.

The Pharmacopœia of the United States of America, was first published near the close of the year 1820, under the authority of a *National Medical Convention,* which met at Washington on the first day of the preceding January. A revised edition of this work appeared in 1830, and regulations were now made for revising it every ten years. The second revision commenced in 1840, and resulted in the publication of the last Pharmacopœia in 1842.

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* Historical Sketch of the progress of Pharmacy in Great Britain. By Jacob Bell.

A Pharmacopœia is in course of preparation for Bengal and Upper India.

The following list includes most of the Pharmacopœias that have been published by authority, but some, such as those of Lyons, Toulouse, Cologne, and Augsburg, have become obsolete.

BRITISH EMPIRE.

Pharmacopœia Collegii Regalis Medicorum Londinensis. Lond. 1836.

The Pharmacopœia of the Royal College of Physicians of Edinburgh. Edinb. 1841.

Pharmacopœia Collegii Medicorum Regis et Reginæ in Hibernia. Dublin, 1826.

FRANCE.

Codex, Pharmacopée Française. Paris, 1839.

Codex Medicamentorum, seu Pharmacopœia Tolosana. Tolos. 1648, 1695.

Pharmacopée de Lyon. 1778.

RUSSIA.

Pharmacopœia Rossica. Petrop. (St. Petersburgh,) 1778, 1782, 1803.

Pharmacopœia Navalis Rossica. Petrop. (St. Petersburgh,) 1784.

Pharmacopœia Castrensis Ruthena. Petrop. (St. Petersburgh,) 1818.

Pharmacopœia Regni Poloniæ. Varsoviæ. (Warsaw,) 1817.

Pharmacopœia Fennica. Abo, 1819.

DENMARK.

Pharmacopœia Danica. Hafn, 1772, 1786, 1805, 1840.

Pharmacopœia Militaris. Hafn, 1818.

SWEDEN.

Pharmacopœia Holmiensis. Stockholm, 1686.

Pharmacopœia Suecica. Holm, 1705, 1775, 1776, 1779, 1789, 1817..

Pharmacopœia Militaris, Navalis, et eorum usui accommodata qui impensis publicis curantur. Holm, 1789.

HOLLAND AND BELGIUM.

Pharmacopœia Amstelodamensis nova. Amstelod. 1792.

Pharmacopœia Antwerpiensis. Antwerp, 1661.

Pharmacopœia (manualis) Antwerpiæ, 1812.

Pharmacopœia Batava, recusa cum notis et additamentis Medico-pharmaceuticis, &c. Edid. Jo. Frid. Niemann. Lips. 2 tom. 8vo. 1805, 1811, 1824.

Pharmacopée Belgique. 8vo. La Haye, (Hague), 1702, 1823, 1829.

Pharmacopœia Hagana. 1738.

Pharmacopœia Leidensis. Leyden, 1751, 1770.

Pharmacopœia Leodensis. Liège, 1741.

Pharmacopœia Utrajectiva. Utrecht, 1664.

GERMANY.

Pharmacopœia Austriaca. Vindob (Vienna), 1820.

Pharmacopœia Austriaco-Provincialis. Vien. 1794.

Pharmacopœia Austriaco-Castrensis. Vindob (Vienna), 1800.

Pharmacopœia Augustana. Aug. Vindel (Augsburg), 1601, 1764.

Pharmacopœia Argentoratensis. Strasburg, 1725, 1757.

Pharmacopœia Bavarica. Monachii, (Munchen), 1822.

Pharmacopœia Borussica. Berol. (Berlin), 1799, 1813, 1827.

Pharmacopœia Castrensis Borussica. Berol. (Berlin), 1823.

Pharmacopœia Hanoverana. Hanoveræ, 1819.

Pharmacopœia Herbipolitana. Wurceburg, 1796.

Pharmacopœia in usum Nosocomii Militaris Wurceburgensis. Wurceburg, 1815.

Pharmacopœia Oldenburgica cum Gratiâ et Privilegio. Oldenburgi, 1801.

Pharmacopœia Palatina. Manheim, 4to. 1803.

Pharmacopœia Pauperum in usum Instituti Clinici Hamburgensis. Hamburg, 1804.

Pharmacopœia Ratisbonensis. 1726.

Pharmacopœia in usum officinarum Reipublicæ Bremensis. (Auctor, Treviranus, et Heineken), 1792.

Pharmacopœia Saxonica, jussu Regio et auctoritate publicâ edita. 8vo. Dresden. 1820.

Pharmacopœia Wirtenbergica. Stutt. 1750, 1770, 1785, 1798.

Dispensatorium usuale pro Pharmacopœiis inclytæ Reipubl. Coloniensis. Col. 8vo. 1565.

Dispensatorium Fuldense à F. A. Schlereth. Edit. 11. Francof. 1791.

Dispensatorium Hessiacum, cur Piderit. Cassell, 1806. Additamenta, 1816.

Dispensatorium Lippiacum, genio moderno accommodatum auctoritate Collegii Medici. Redegit J. Ch. Fr. Scherf. Vol. I. 1792. Vol. II. 1794.

SWITZERLAND.

Pharmacopœia Genevensis, auct. C. G. Dunant, L. Odier, et De la Roche. Gen. 8vo. 1780.

Pharmacop. Helvetica. 1771. 2 vols. fol.

Pharmacopœia Regia, Galenica et Chimica. Gen. 1684.

Manuale Pharmaceuticum in usum minorum urbium. Basil. 8vo. 1779.

ITALY.

Antidotario Romano Commentato de Pet. Castello. Rom. 4to. 1629.

Bononiensis Collegii Medicorum Antidotarium, editum anno 1783. Editio novissima in qua Completissimus adjectus est Index virium ac Usuum Medicamentorum. Venet. (Venice). 4to. 1783.

Formulario Farmaceutico. Genov. (Genoa), 1791. 8vo.

Formulario Farmaceutico per uso dell Ospedale di Pammatone. Genov. (Genoa). 8vo. 1798.

Codice Pharmaceutico per lo stato della ser. Rep. di Venezia, compilato per ordine del excellentiss. magistrato della Sanita. Padov. (Padua). 4to. maj. 1790.

Pharmacopœia Bergamensis, rationem componendi medicamenta usitatiora complectens, ed. P. Lanci et P. Maselli. Berg. (Bergamo). 4to. 1580.

Pharmacopœia Ferrarese, del dott. Antonio Campana. Firenz. Edit. 7 ma. 1821, pp. 423.

Pharmacop. Messenensis. Mess. fol. 1629.

Pharmacop. Sardoa, ex Selectioribus codicibus, optimisque Scriptoribus collecta, in unum corpus digesta, ac nunc primum edita, a Jac. Jn. Pedemontano August. Taurin, (Turin). 4to. 1773.

Ricettario de dottori de Arte e di Medicina dell Collegio Fiorentino all' instanza di Signori Conculi della Universita cett. Fiorenze, fol. 1498. Recus. *ibid.* 1567, 1597.

Ricettario Fiorentino, nuovamente Compilato e redotto all' uso Moderno, diviso in due parte. Firenze, 1789, 4to. pp. 350.

SPAIN.

Pharmacopœia Catalana. 4to. 1686.

Farmacopea en Castellano. Madrid, 1823.

Pharmacopœia Hispana. Ed. alt. Regis jussu et impensis. Madrid, 8vo. 1798.

Pharmacopœia Madritensis, protomedicatus auctoritate elaborata. 4to. 1739.

Pharmacopœia Madritensis. 1729, 1738, 1794, 1798, 1822.

Pharmacopœia Valentianensis. Valenc. 4to. 1651.

PORTUGAL.

Pharmacopeia Geral para o Reina e Dominios de Portugal, publicada por ordem da Rainha Fidelissima Maria I. 8vo. Lisbon, 1794, tomo I. Elementos do Pharmacies, pp. 228 ; tomo II. Medicamentos simplices, preparandos e compositos, pp. 248.

Pharmacopœia Lusitana. Lisbon, 1711.

Pharmacopœia do Pinto. Coimbra, 1794.

GREECE.

Pharmacopœia Græca, jussu Regio et approbatione Collegii Medici edita, auctoribus Joanne Bairo, Xaverio Landerer, Josepho Sartori. Athens, 1837.

PERSIA.

Pharmacopœia Persica, ex idiomate Persico in Latinum Conversa. Paris, 1681.

AMERICA.

The Pharmacopœia of the United States of America. By the authority of the Medical Societies and Colleges. 8vo. Boston, 1820.

Ditto. New Edition. Philad. 1842.

Besides these Pharmacopœias, which have been published under the sanction and authority of the laws of the respective countries in which they are principally used, there are a great number of works, usually called Dispensatories, which resemble Pharmacopœias in their general objects, but differ from them in being the production of individual authors, and not of any public bodies having legal power to enforce compliance with the prescribed formulæ. Several works of this description, which appeared in the sixteenth century, have already been alluded to; a brief notice of some of those which have since been published will now be given.

Quercetan's *Pharmacopœia Dogmaticorum Restituta* was published in 1603. An edition of this work was published at Frankfort, in 1615, together with a second edition of the *Dispensatorium Medicum,* of Renou or Renodoeus. This was probably the first Dispensatory written upon the plan which has generally been adopted by the authors of Dispensatories in this country. It treats, first, of Pharmaceutical Operations; secondly, of the Materia Medica; and thirdly, of the Preparations and Compounds; each formula being followed by a commentary.

In 1621, Mindererus published a work on Military Medicine; and about the same time appeared the *Pharmacopœia Spagirica* of Poterius.

Schroeder's *Pharmacopœia Medico-Chymica* was a work of some merit. It was published in 1641, at Ulm, in Wurtemberg. An edition of 1672, published at Leyden, in Holland, contains the Materia Medica, in Latin, French, English, and Dutch.

Glauber's works—*De Furnis Novis Philosophicis; Tractatus de Medicina Universali: De Natura Salium; Novum lumen Chimicum;* and *Pharmacopœia Spagirica*—were published between the years 1646 and 1668, in which latter year the author died.

About this year Culpeper wrote, and acquired some celebrity by the severity of his criticisms on the London College of Physicians and their first Pharmacopœia. He was born in 1616, and published his translation of the London Pharmacopœia in 1653, soon after which period he died.

In 1676, Charas published his *Pharmacopée Royale, Galenique et Chemique,* which two years afterwards was published in this country in English.

Contemporary with Charas, and not less celebrated as pharmaceutical writers, were Pomet, chief Pharmacien to Louis XIV., whose *Histoire des Drogues,* was published in 1694, and Nicolas Lemery, whose *Pharmacopée Universelle,* and *Dictionnaire ou Traité Universel des Drogues Simples,* were published in 1697. These works acquired a just and lasting reputation. The second edition of Lemery's Dictionary was published in Paris in 1714.

In 1688, Mr. James Shipton, an apothecary in London, published a collection of formulæ said to have been those prescribed by Dr. George Bate, a celebrated physician in the time of Charles II. This work was entitled, *Pharmacopœia Bateana. In qua octingenta circiter pharmaca, pleraque omnia é praxi Georgii Batei, Regi Carolo Secundo proto-medici excerpta, ordine alphabetico concise exhibentur. Quorum nonnulla in Laboratorio Publico Pharmacopœano Lond. fideliter parantur venalia: atque in usu sunt hodierno apud Medicos Londinenses.* The third edition appeared in 1700. Meanwhile, translations of the previous editions were published by Dr. Fuller in 1691; and by Dr. Salmon, in 1694. The Pharmacopœia Bateana has been a work of frequent reference from the time of its first appearance to the present day.

Dr. Fuller also published a Pharmacopœia of his own, called the *Pharmacopœia Extemporanea,* in 1714.

Dr. Quincy was an author of some repute in the early part of the eighteenth century. He delivered lectures on Pharmacy, which were published shortly after his death, in 1723, by Dr. Shaw. His principal work was his *Pharmacopœia Officinalis et Extemporanea,* or *Complete English Dispensatory,* which first appeared in 1718, and reached a sixth edition in 1726. It was translated into French, in 1745, by Clausier.

Dr. R. James's *Pharmacopœia Universalis,* or *New Universal English Dispensatory,* followed Dr. Quincy's, being first published in 1747, and the second edition in 1752. It was arranged on a similar plan to that of Quincy's Dispensatory.

In 1753 was published Dr. Brookes's *General Dispensatory;* and in the following year, 1754, Dr. Lewis published the first edition of his *New Dispensatory,* containing commentaries on the London and Edinburgh Pharmacopœias. A concise system of the theory and practice of Pharmacy was prefixed as an introduction. This work acquired a high reputation, and was decidedly the best of the kind that had been published at the time. It passed through many editions during the author's lifetime; and after his death, the work was reprinted without much alteration, in London, where it had originally been published; while, in Edinburgh, Dr. Webster, Dr. Duncan, Dr. Rotherham, and Dr. Duncan, jun., brought out new editions of it, with such alterations and improvements as the advancement of scientific knowledge demanded; and to distinguish these from the London editions, the authors adopted the title of *The Edinburgh New Dispensatory.*

Dr. Duncan, jun., became the editor, in 1803, from which time to 1830, the work passed through twelve editions. The tenth edition was translated into French by M. E. Pelouse, with notes by Robiquet and Chéreau.

In 1806, Dr. Coxe's American Dispensatory appeared.

Dr. Anthony Todd Thomson commenced the publication of his *London New Dispensatory* in 1811. This work was written on the plan of the Edinburgh New Dispensatory; it has been always considered a very useful work, and has had a great circulation, having gone through ten editions.

In this year, 1811, also appeared the *Traité de Pharmacie, Theorique et Practique,* of I. I. Virey.

Dr. Paris's Pharmacologia, although not strictly a work of the description here treated of, merits a brief notice on account of the information it contains on pharmaceutical subjects. It was first published in 1812, and has reached the ninth edition.

In 1818, Mr. Gray published the first edition of his *Supplement to the Pharmacopœias.* In the preface he states:—

"The intention of the present work is to give a concise account of the actual state of our knowledge of drugs in general, using that term in its most extensive signification, as including not only those natural substances and compounds which are employed by physicians or private practitioners in the practice of medicine, but those other substances and compounds which, from their analogy to these, are usually sold by the same retailers as sell medicines, for the purpose of being used as dyes, paints, perfumes, cosmetics, liqueurs, &c.; and upon this account the work appears under the title of a Supplement to the Pharmacopœia, as that book contains only the medicines in use at present with the physicians of London and its environs.

"Still, however, the medicines form the greater bulk of the work, from the vast variety of them that are employed in different places."

This work has passed through six editions previous to the present.

Magendie's *Formulaire pour la Préparation et l'Emploi de Plusieurs Nouveaux Médicamens*, commenced in 1821; it has been translated into English by Mr. Houlton and Dr. Gully, and has been a work of frequent reference and great utility to the pharmaceutists and medical practitioners of this country.

In 1824, Mr. Richard Phillips, who had previously published some criticisms on the London Pharmacopœia, brought out a translation of the new edition of the Pharmacopœia, published by the London College in that year. This work contained much valuable information on practical pharmacy some of which the college availed themselves of in the subsequent edition of their Pharmacopœia; and of this latter work Mr. Phillips became the authorised translator.

Brande's Manual of Pharmacy was published in 1825; and Rennie's New Supplement to the Pharmacopœias in 1826.

In 1828 appeared Jourdan's *Pharmacopée Universelle*, an English translation of which was edited by Rennie in 1833.

In 1828 also appeared the *Traité de Pharmacie*, of Henry and Guibourt of Paris; a work of great merit. The third edition has been published in an enlarged form by Professor Guibourt.

The *Observations on the Dublin Pharmacopœia*, by Drs. Barker and Montgomery, which appeared in 1830, and the *Translation of the London Pharmacopœia*, with criticisms, by Dr. Collier, in 1837, contain a good deal of valuable information.

Dr. Kane, of Dublin, in 1831, published a very useful little volume, entitled *Elements of Practical Pharmacy.*

Among the best works of this class, which have more recently been published, must be mentioned *The Dispensatory of the*

United States of America, by Drs. Wood and Bache; first edition, 1833; fifth edition, 1843.

The *Nouveau Traité de Pharmacie*, by E. Soubeiran; first edition, 1836; second edition, 1842.

The *Cours Couplet de Pharmacie*, by L. R. Le Canu; 1842.

The Elements of Materia Medica, by Dr. Pereira; first edition, 1837; second edition, 1842.

A Dispensatory, or Commentary on the Pharmacopœias of Great Britain, by Dr. Christison. 1842.

The Bengal Dispensatory, by Dr. O'Shaughnessy. 1842.

Medicines, their Uses and Mode of Administration, by Dr. eligan. 1844.

The Pocket Formulary, by Henry Beasley. 1844.

WEIGHTS AND MEASURES.

Weights and measures are artificial standards by which the gravity and bulk of substances are estimated. In the first instance some natural products, such as seeds, which were easily attainable, and the gravity and dimensions of which were pretty uniform, were used as units, from which other denominations of weight or measure were calculated. Thus by a law passed in the fifty-first year of the reign of Henry III., A. D. 1266, it was enacted, that "an English penny, called a sterling, round and without clipping, shall weigh thirty-two wheat corns in the midst of the ear, and twenty pence do make an ounce, and twelve ounces one pound, and eight pounds do make a gallon of wine, and eight gallons of wine do make a London bushel, which is the eighth part of a quarter." The standards of weight and measure being arbitrary, differences have existed between those adopted in different countries, and it has not unfrequently occurred that two or three standards have been employed in the same country. This has been the case in England, where the Avoirdupois, the Troy, the Tower or Saxon, and the Foil weights, have been introduced at different periods, and more or less extensively used for weighing different substances.

ENGLISH WEIGHTS.

Avoirdupois weight, according to Mr. Gray, (Elements of Practical Pharmacy, p. 5,) was introduced to this country by the Romans, at the period of the first civilisation of the island; but it was then called auncel weight, from its being used according to the Roman custom, with the *statera Romana* or steel-yard, or with the auncel, *ansula*, or Danish steel-yard, with a fixed weight and moveable fulcrum. Dr. Ellis, however, in a paper published in the second volume of the American Journal of Pharmacy, states that the Troy and Avoirdupois weights were originally introduced by the Lombards, and the first sanctioned by law in 1496, when it was introduced in the composition of the gallon and bushel. In the 24 Henry VIII., butchers are ordered to provide beams, scales, and weights, called *haberdepois.*

AVOIRDUPOIS WEIGHT (*Old Division.*)*

	Equivalents in Troy grains.
1 grain English	0·77
24= 1 scruple English	18·22
36= 1½= 1 adarme of silk	27·34
72= 3= 2= 1 dram English	53·69
576= 24= 16= 8= 1 ounce	437·50
6912=288=192= 96=12=1 small pound	5250·00
9216=384=256=128=16=1 pound	7000·00

Other pounds, containing more ounces, have been in use in different trades and places, as that for raw silk, containing 24 ounces. The Roman government allowed the merchants for waste, in paying custom duties, 20 ounces to the pound; so that the 100 pounds, or centenarius, was 120 common pounds. They afterwards lowered the allowance to 18 ounces to the pound, so that the 100 pounds was 112 common pounds and a half. The fraction has since been omitted, and the hundred-weight reckons 112 pounds.

Although our avoirdupois weight has been said to have been derived from the Romans, yet there appears to be some little difference in the values of our pound avoirdupois and the standard of the same denomination still kept at Rome, the Roman pound of 12 ounces being 11 troy grains lighter than ours.

A different division of the pound from that above given was employed by the Romans, as well as a different nomenclature. The common traders used a set of weights in which the ounce was divided and subdivided by two, as follows:—

ROMAN WEIGHT.

	Equivalents in Troy grains.
1 lens or primus	0·76
18= 1 quadrans drachmæ	13·64
36= 2= 1 dimidium drachmæ	27·28
72= 4= 2= 1 drachma	54·57
144= 8= 4= 2= 1 sicilicus, or siclus	109·14
288= 16= 8= 4= 2= 1 semiuncia, or assarius	218·29
576= 32= 16= 8= 4= 2= 1 uncia	436.58
6912=364=192= 96=48=24=12=1 libra	5239·00
9216=712=256=128=64=32=16=1 mina or pondo	6985·00

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* Gray's Elements of Pharmacy, p. 5.

Another division of the ounce, used by some old medical writers, was into sextulæ and scrupuli, which latter were subdivided in imitation of the attic weights, as in the following table.

	Equivalents in Troy grains.
1 chalcos - - - - -	1·13
8= 1 simplium or obolus - - -	9·09
16= 2= 1 scrupulum or gramma - -	18·19
64= 8= 4= 1 sextula or sextans - -	72·78
128= 16= 8= 2= 1 duella or bina sextula -	145·56
384= 48= 24= 6= 3= 1 uncia - -	436·58
4608=576=288=72=36=12=1 libra - -	5239·00

The following terms are sometimes met with in old Latin medical and chemical works for denoting different numbers of ounces:—

11 ounces,	deunx	7 ounces,	septunx.
13 ,,	dextans or decunx	6 ,,	semis, semissis, semissius, selibra, or sembella.
9 ,,	dodrans	5 ,,	quincunx.
8 ,,	bes, bessis, or des	4 ,,	triens.
		3 ,,	quadras libræ, or triunx.
		2 ,,	sextans libræ.
		1 ,,	uncia.

The modern division of the avoirdupois pound will be found at page 20, where it will be seen that the ounce is divided into 16 drams; but according to Mr. Gray, the division originally was, into 8 drams and 16 adarms. The adarm having been, in modern times, employed only in the sale of silk, has become confounded with the dram.

Troy weight.—Some differences of opinion have been expressed as to the period at which this weight was introduced into England. The committee upon whose report was founded the act of 1824, for regulating weights and measures, state as their reason for recommending the adoption of the troy pound as the standard unit of weight—" Because it is the weight best known to our law; that which hath been longest in use; that by which our coins are measured; that which is best known to the rest of the world; that to which our learned countrymen have referred, and compared ancient and modern weights; the weight which hath been divided into the smallest parts. On the other hand, the avoirdupois weight is of doubtful authority; and, though unfit to be made a standard, yet the frequent use of it renders it necessary to ascertain how many ounces, pennyweights, and grains troy, the pound avoirdupois ought to weigh." The divisions of the troy pound, including the apothecaries weight, are as follows:—

TROY AND APOTHECARIES WEIGHT (*Old division*).

1 grain.
6= 1 farthing penny of silver.
20= 1 scruple, apothecary.
24= $1\frac{1}{5}$= 1 pennyweight, or denarius.
30= $1\frac{1}{2}$= $1\frac{1}{4}$= 1 farthing penny of gold.
60= 3= $2\frac{1}{2}$= 1 drachm, apothecary.
288=$14\frac{2}{5}$= 12=$4\frac{2}{3}$=1 shilling or solidus.
480= 24= 20=8 =$1\frac{2}{3}$= 1 ounce troy and apothecary.
5760=288=240=96=20=12=1 pound troy and apothecary.

For the sake of calculation, the gold and silversmiths divide the grain troy into 20 mites, the mite into 24 droits, the droit into 20 periots, and the periot into 24 blanks.

The shilling was more usually employed as the first division of the troy pound, than the ounce, which seems to have been restricted to the avoirdupois weight, as the name of the ore was to the first divisions of the Saxon pound or Danish mark.

The modern divisions of the troy and apothecaries' pound will be found at pages 20 and 21.

TOWER OR SAXON WEIGHT.—From an old record, it appears that the Tower pound counterpoised $11\frac{1}{4}$ ounces, or 5400 grains troy. The exact correspondence of 8 ounces of this weight with the mark of Cologne, used in most of the German mints, shows that this pound is the small pound of our Saxon ancestors, or that of the Easterlings, as being derived from Greece, through Thrace. Galen informs us that 24 Greek litras were equal to 25 Roman libras, which is very nearly the proportion between this pound and the 12 ounce avoirdupois pound.

The reports of assayers refer to this small Saxon pound as the integer. The divisions employed in assaying gold, and formerly in weighing it, are the following:—

TOWER WEIGHT (*Gold*).

	Equivalents in Troy grains.
1 Tower grain - - - - -	0·98
15= 1 quarter carath grain, or feorthling mancus	13·87
60= 4= 1 carath grain or mancus - -	55·50
240= 16= 4= 1 carath or loth - - -	225·00
5460=384=96=24=1 Tower pound - -	5400·00

In assaying silver, a different division of weights is employed, and although it is probable from analogy that the integral pound used for this purpose was originally the same as that used for assaying gold, yet, as it has been divided in the same way as the troy pound, the integer is now supposed to refer to this latter; and the talent, now called a journey (day's work) of silver, is taken as sixty pounds troy.

TOWER WEIGHT (*Silver*).

	Equivalents in Troy grains.
1 Tower grain - - - - -	0·98
24= 1 peninga or penny - - -	22·50
480= 20= 1 ora or ounce - - -	450·00
5460=240=12=1 Tower pound - - -	5400·00

Other divisions of this pound were formerly made for weighing different commodities, as also another pound containing fifteen ounces. The whole are comprised in the following table.

TOWER WEIGHT.

	Equivalents in Troy grains.
1 Tower grain - - - - - -	0·98
24= 1 peninga - - - - -	22·50
36= 1¼ = 1 mærra peninga or bener peninga - -	27·75
60= 2½ = 2 = 1 mancus or drachma - - -	55·50
96= 4 = 3⅗ = 1⅗+ 1 smaelle skylling - - -	90·00
120= 5 = 4 = 2 = 1¼= 1 skilling - - -	112·50
384= 16 = 12⅘ = 6⅖ = 4 =3⅕= 1 smaelle ora - -	360·00
480= 20 = 16 = 8 = 5 =4 = 1¼ = 1 ora - .	450·30
2400=100 = 80 = 40 =25 =20= 6 = 5=1 Danish marc .	2250·00
5460=240 =192 = 96 =60 =48=15 =12=1 smaelle punda -	5400·00
7200=300 =240 =120 =75 =60=18¾ =15=1 punda - -	6750·00

Trett. An allowance used to be made on some goods at the Custom House, and also in their sale from the wholesale to the retail dealers, called *trett.* This allowance amounted to 4 lbs. in 104 lbs.: that is, 104 lbs. were reckoned as 100 lbs., the 4 lbs. being allowed for *trett.* Now this 4 lbs. in 104 lbs. is just the difference between the Tower weight and avoirdupois weight, 104 lbs. of 15 ores Tower weight, being equal to 100 lbs. of 16 ounces avoirdupois weight. Hence it is probable that this allowance was first made in consequence of the Tower weight being used for weighing goods at the Custom House, and that the object of the allowance was to reduce this weight to the avoirdupois weight generally used in commerce. The practice of allowing trett at the Custom House has been for some time abolished. Trett has been supposed by some persons to be an allowance made on account of waste.

Foil Weight.—This was formerly used to weigh gold and silver wire, foil, and jewels: and its smaller divisions are still used by the jewellers to weigh diamonds, pearls, and precious stones. As the pound is nearly equal to that of Venice, which weighs 4656 troy grains, and as the articles for which it has been used were formerly imported from Venice, this weight was most likely introduced from thence.

FOIL WEIGHT.

						Equivalents in Troy grains.
1 sixteenth						0·05
16=	1 jeweller's grain					0·80
64=	4=	1 jeweller's carat				3·20
404=	24=	6=	1 penny foil			19·20
7680=	480=	120=	20=	1 ounce foil		384·00
92160=	5760=	1440=	240=	12=	1 pound foil	4608·00

The carat of this weight is derived from the seed of the kurua-tree, whereas the carath of the Tower pound is an Egyptian word, signifying the 24th part of anything, and is applied in Egypt to the divisions of the land into provinces, or of the larger cities into wards, in the same manner as the Latin uncia is used for the 12th part of an integer. As the jewellers mostly deal in silver and gold, and are, therefore, obliged to keep the troy weight, they now use those weights for their jewels, but reckon 150 carats for an ounce. The sixteenths foil, which are equal to the mites of the gold and silversmiths, are sometimes divided again into quarters, which are the smallest weights used in commerce. Some authors assert that the troy ounce is equal to 152 carats 3 grains, in which case, of course, the carat would be equal to 3·152 troy grains.

Imperial Weight.—By a law passed in the year 1824, (5 Geo. IV., cap. 74,) it was enacted, "That from and after the first day of May, 1825, the standard brass weight of one pound troy weight, made in the year 1758, now in the custody of the clerk of the House of Commons, shall be, and hereby is declared to be, the original and genuine standard measure of weight, and that such brass weight shall be, and is hereby denominated the IMPERIAL STANDARD TROY POUND, and shall be, and the same is hereby declared to be, the unit or only standard measure of weight, from which all other weights shall be derived, completed, and ascertained; and that one-twelfth part of the said troy pound shall be an ounce; and that one-twentieth part of such ounce shall be a pennyweight; and that one-twenty-fourth part of such pennyweight shall be a grain; so that 5760 such grains shall be a troy pound; and that 7000 such grains shall be, and they are hereby declared to be, a pound avoirdupois; and that one-sixteenth part of the said pound avoirdupois shall be an ounce avoirdupois; and that one-sixteenth part of such ounce shall be a dram."

"And whereas it is expedient that the said standard troy pound, if lost, destroyed, defaced, or otherwise injured, should be restored of the same weight, by reference to some invariable natural standard; and whereas it has been ascertained, by the

“ commissioners appointed by his Majesty to inquire into the “ subjects of weights and measures, that a cubic inch of distilled “ water, weighed in air by brass weights, at the temperature of “ 62° of Fahrenheit's thermometer, the barometer being at “ 30 inches, is equal to two hundred and fifty-two grains and “ four hundred and fifty-eight thousandth parts of a grain, of “ which, as aforesaid, the imperial standard troy pound contains “ 5760 ; be it therefore enacted, that if at any time hereafter the “ said imperial standard troy pound shall be lost, or shall be in “ any manner destroyed, defaced, or otherwise injured, it shall “ and may be restored by making, under the direction of the “ Lord High Treasurer, or the Commissioners of his Majesty's “ Treasury of the United Kingdom of Great Britain and Ireland, “ or any three of them for the time being, a new standard troy “ pound, bearing the same proportion to the weight of a cubic “ inch of distilled water, as the said standard pound hereby “ established bears to such cubic inch of water.”

And by a law passed in the year 1835, (5 & 6 Gulielmi IV., cap. 63,) the use of any other weights besides those above described, and the apothecaries' weight, is rendered illegal, and it is enacted, “ That from and after the passing of this act, all articles “ sold by weight shall be sold by avoirdupois weight, except “ gold, silver, platina, diamonds, or other precious stones, which “ may be sold by troy weight, and drugs, which, when sold by “ retail, may be sold by apothecaries' weight.”

The following, then, are the three kinds of weight now recognised by law in this country.

AVOIRDUPOIS, OR IMPERIAL WEIGHT.

						Equivalents in Troy grains.
1 dram						27·34375
16=	1 ounce					437·5
256=	16=	1 pound				7000·
3584=	224=	14=	1 stone			98000·
28672=	1792=	112=	8=	1 hundred weight		784000·
473440=	35840=	2240=	160=	20=	1 ton	15680000·

TROY WEIGHT.

1 grain.
24= 1 pennyweight.
480= 20= 1 ounce.
5760=240=12=1 pound.

APOTHECARIES' WEIGHT.

1 grain.
20= 1 scruple.
60= 3= 1 drachm.
480= 24= 8= 1 ounce.
5760=288=96=12=1 pound.

The apothecaries' weight is that alone, the use of which is recognised by the colleges of physicians, in the preparation or dispensing of medicines, either according to the Pharmacopœia, or extemporaneous prescriptions. It is not, however, customary for pharmaceutical chemists to keep any large weights of this description, and, therefore, in preparing medicines on the large scale, it is necessary to calculate the equivalents of the weights ordered, in avoirdupois weight, the latter being the only kind of large weights generally used. The following table has been prepared for the purpose of facilitating such calculations.

EQUIVALENTS IN TROY AND AVOIRDUPOIS WEIGHT.

Troy Grains.	TROY.				AVOIRDUPOIS.		
	lbs.	oz.	drs.	grs.	lbs.	oz.	grs.
60			1				60
120			2				120
240			4				240
437·5			7	17·5		1	
480		1				1	42·5
875		1	6	35		2	
960		2				2	85
1312·5		2	5	52·5		3	
1440·		3				3	127·5
1750·		3	5	10		4	
1920·		4				4	170
2187·5		4	4	27·5		5	
2400		5				5	212·5
2625·0		5	3	45·		6	
2880·		6				6	255
3062·5		6	3	2·5		7	
3360		7				7	297·5
3500		7	2	20·		8	
3840		8				8	340
3937.5		8	1	37·5		9	
4320·		9				9	382·5
4375·		9	0	55·		10	

Troy grains.	TROY.				AVOIRDUPOIS.		
	lbs.	oz.	drs.	grs.	lbs.	oz.	grs.
4800		10				10	425
4812·5		10		12·5		11	
5250		10	7	30·		12	
5280		11				12	30
5687·5		11	6	47·5		13	
5760·	1	12				13	72·5
6125·	1	0	6	5·		14	
6562·5	1	1	5	22·5		15	
7000	1	2	4	40·	1	16	
7680	1	4			1	1	242·5
9600	1	8			1	5	422·5
10500	1	9	7		1	8	
11520	2				1	10	145
14000	2	5	1	20	2		
17280	3				2	7	217·5
21000	3	7	6	0	3		
23040	4				3	4	290
28000	4	10	2	40	4		
28800	5				4	1	362·5
34560	6				4	14	435
35000	6	0	7	20	5		
40320	7				5	12	70
42000	7	3	4	0	6		
46080	8				6	9	142·5
49000	8	6	0	40	7		
51840	9				7	6	215
56000	9	8	5	20	8		
57600	10				8	3	287·5
63000	10	11	2	0	9		
63360	11				9	0	360
69120	12				9	13	432·5
70000	12	1	6	40	10		
74880	13				10	11	67·5
77000	13	4	3	20	11		
80640	14				11	8	140
84000	14	7	0	0	12		
86400	15				12	5	212.5
91000	15	9	4	40	13		
92160	16				13	2	285
97920	17				13	15	357·5
98000	17	0	1	20	14		
103680	18				14	12	430
105000	18	2	6	0	15		
109440	19				15	10	65
112000	19	5	2	40	16		
115200	20				16	7	137·5

Troy grains.	TROY.				AVOIRDUPOIS.		
	lbs.	oz.	drs.	grs.	lbs.	oz.	grs.
119000	20	7	7	20	17		
120960	21				17	4	210
126000	21	10	4	0	18		
126720	22				18	1	282·5
132480	23				18	14	355
133000	23	1	0	40	19		
138240	24				19	11	427·5
140000	24	3	5	20	20		
144000	25				20	9	62·5
147000	25	6	2	0	21		
149760	26				21	6	135
154000	26	8	6	40	22		
155520	27				22	3	207·5
161000	27	11	3	20	23		
161280	28				23	0	280
167040	29				23	13	352·5
168000	29	2	0	0	24		
172800	30				24	10	425
175000	30	4	4	40	25		
178560	31				25	8	59
182000	31	7	1	20	26		
184320	32				26	5	131·5
189000	32	9	6	0	27		
190080	33				27	2	204
195840	34				27	15	276·5
196000	34	0	2	40	28		
201600	35				28	12	149
203000	35	2	7	20	29		
207360	36				29	9	421·5
210000	36	5	4	0	30		
23040	40				32	14	275
280000	48	7	2	40	40		
288000	50				41	2	125
345600	60				49	5	412·5
350000	60	9	1	20	50		
403200	70				57	9	262·5
420000	72	11	0	0	60		
460800	80				65	13	113
490000	85	0	6	40	70		
518400	90				74	0	400·5
560000	97	2	5	20	80		
576000	100				82	4	250·5
630000	109	4	4	0	90		
645120	112				92	2	245
700000	121	6	2	40	100		
784000	136	1	2	40	112		

FOREIGN WEIGHTS.

French Weights.—Previous to the revolution of 1789, the weight called "*poids de marc*," the unit of which was the pound of Charlemagne, was that almost exclusively used in France. This was divided in the following manner :—

OLD FRENCH WEIGHT.

	Equivalents in English troy grains.	Equivalents in French grammes.
1 grain	0·8203	0·0531
24= 1 scrupule	19·687	1·274
72= 3= 1 gros or dragme	59·070	3·824
576= 24= 8= 1 once	472·562	30·594
4608=192= 64= 8=1 marc	3780 500	244·750
6612=288= 96=12=1 livre medicinal	5670·750	367·125
9216=384=128=16=1 { livre marchand or poid de marc }	7561·000	489·500

During the progress of the revolution, a new system of weights and measures was introduced by the government, which has been called the decimal or metrical system. According to this system, the ten-millionth part of a quarter of the meridian of the earth is taken as the unit from which all other measures are calculated. This unit is called the *mètre* (from μετρον, measure). It is divided into ten parts, each of which is called a *decimètre;* and this is again divided into ten parts, each of which is called a *centimètre.* A cubic décimètre is taken as the unit of measures of capacity, and is called a *litre.* A cubic centimètre of distilled water, at its *maximum* density, that is, at a temperature of 39·5° Fahrenheit, is the unit of weights, and is called a *gramme.* In the following table the French metrical weights are given, with their equivalents in English troy and avoirdupois weights.

FRENCH METRICAL WEIGT.								Equivalents in Troy Weight.				Equivalents in Avoirdupois Weight.			Equivalent in Troy Grains
Myriogramme.	Kilogramme.	Hectogramme.	Decagramme.	Gramme.	Decigramme.	Centigramme	Millegramme.	lbs.	oz.	drs.	grs.	lbs.	oz.	troy grs.	
							1								015
						1	10								·154
					1	10	100				1·5			1·5	1·543
				1	10	100	1000				15·4			15·4	15·434
			1	10	100	1000	10000			2	34			154	154·340
		1	10	100	1000	10000	100000		3	1	43		3	230·9	1543·402
	1	10	100	1000	10000	100000	1000000	2	8	1	14	2	3	121·5	15434·023
1	10	100	1000	10000	100000	1000000	10000000	26	9	4	20	22	0	340	154340·234

Several laws have been passed, at different periods, to render the metrical system of weights and measures obligatory throughout France, but for many years it was found impossible to overcome the prejudices of the people in favour of the old system.

In 1812 an attempt was made to amalgamate the old and new systems, by altering the old pound, or *livre*, making it equal to the half kilogramme, taking this as the unit, and calculating the other divisions from this, according to the old nomenclature. The following table contains this system of weights, with the equivalents in French grammes, and in English avoirdupois weight.

FRENCH WEIGHTS OF 1812.

French weights of 1812.		Metrical weight grammes.		English avoirdupois.			
				lb.	oz.	dr.	grains.
1 livre	=	500	=	1	1	10	11·07
½ ,,	=	250	=		8	13	5·53
¼ ,,	=	125	=		4	6	16·18
2 once	=	62·5	=		2	3	8·9
1 ,,	=	31·25	=		1	1	17·71
½ "	=	15·625	=			8	22·52
2 gros	=	7·812	=			4	11·26
1 ,,	=	3·906	=			2	5·63
½ ,,	=	1.9021	=			1	2·81
1 grain	=	0·0542	=				0·90

The adoption of this system was not made obligatory upon the pharmaciens by law, until the year 1827; and indeed it appears never to have been generally adopted, the greatest confusion having prevailed with regard to the weights and measures used in the preparation of medicine, as well as in commerce generally, up to the year 1840. In July 1837, a law was passed which definitively abolished the use of all other weights and measures, excepting those of the metrical or decimal system, from and after August 1840. The METRICAL WEIGHT, therefore, is now the only one permitted to be used throughout France.

THE MEDICINAL WEIGHTS used in the principal countries in continental Europe, are represented in the following tables, the third of which gives the equivalents in English troy grains, according to the calculations of Soubeiran and Christison.

1. SPANISH, TUSCAN, ROMAN, AND OLD FRENCH MEDICAL WEIGHTS.

1 grain.
24= 1 scruple.
72= 3= 1 drachm.
576= 24= 8= 1 ounce.
6912=288=96=12=1 pound.

2. AUSTRIAN, GERMAN, RUSSIAN, PRUSSIAN, DUTCH, BELGIAN, SWEDISH, PIEDMONTESE, AND VENETIAN MEDICINAL WEIGHTS.

1 grain.
20= 1 scruple.
60= 3= 1 drachm.
480= 24= 8=1 ounce.
5760=288=96=12=1 pound.

The value of the grain in several of the above countries differs, as will be seen in the following table.

VALUE OF CONTINENTAL MEDICINAL WEIGHTS IN TROY GRAINS.

	Pound.	Ounce.	Dram.	Scruple consisting of		Grain.
				24 grains	20 grains.	
French, (Old)	5670·7	472·50	59·07	19·68		0·820
Spanish	5320·4	443·49	55·44	18·47		0·769
Tuscan	5240·3	436·67	54·58	18·19		0·758
Roman	5235·	436·25	54·53	18·17		0·757
Austrian	6495·1	541·25	67·65		22·55	1·127
German	5524·8	460·40	57·55		19·18	0·960
Russian	5524·8	460·40	57·55		19·18	0·960
Prussian	5415·1	451·26	56·40		18·80	0·940
Dutch	5695·8	474·64	59·33		19·78	0·988
Belgian	5695·8	474·64	59·33		19·78	0·988
Swedish	5500·2	458·34	57·29		19·09	0·954
Piedmontese	4744·7	395·39	49·45		16·48	0·824
Venetian	4661·4	388·45	48·55		16·18	0·809

WEIGHTS IN USE IN BRITISH INDIA.*—The unit of the British Indian ponderary system is called the tola. It weighs 180 grains English troy weight. From it upwards are derived the heavy weights, viz. *chitak*, *seer*, and *mun*, or *maund;* and by its subdivision the small, or jeweller's weights, called *mashas*, *ruttees*, *and dhans*.

In the following table the equivalents for these are given in troy weight.

BRITISH INDIAN WEIGHTS.

	lb.	oz.	Equivalents in Troy weight.
1 dhan			·4687
4= 1 rutter			1·875
32= 8= 1 masha			15·
084= 96= 12= 1 tola or rupee			180·
1920= 480= 60= 5= 1 chitak			900·
30720= 7680= 960= 80= 16= 1 seer	2	6	
153600= 38400= 4800= 400= 80= 5=1 pusseree	12	6	
1228800=307200=38400=3200=640=40=8=1 mun	100	0	

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* O'Shaughnessy's Bengal Dispensatory, from *Princep's Useful Tables*, and Rushton's Bengal and Agra Gazetteer.

The *mun* (or that weight to which it closely accords in value, and to which it is legally equivalent in the new scale) has been hitherto better known among Europeans by the name of *bazaar maund;* but upon its general adoption, under regulation vii., 1833, for all transactions of the British government, it should be denominated the *British maund*, (in the Hindee, *Ungrezee mun,*) to distinguish it at once from all other weights in use throughout the country.

The *seer* being the commonest weight in use in the Indian bazaar, and being liable, according to the pernicious system hitherto prevalent, to vary in weight for every article sold, as well as for every market, is generally in native mercantile dealings referred to the common unit for distinction, as " the seer of so many tolas (or *siccas, barees, takas,* &c.). The standard, or bazaar seer, is always eighty tolas.

The *tola* is chiefly used in weighing the precious metals and coin. All bullion at the mints is received by this denomination of weight.

The following is the system of weights to be adopted in the forthcoming Bengal Pharmacopœia.

" To ensure perfect uniformity in the preparation and doses of medicines, and at the same time to provide a standard universally and easily obtained, we have adopted as the basis of our system, both of weights and measures, *the Honourable East India Company's new rupee.*

" By numerous experiments it has been ascertained that the *new rupee* or *tola,* as found in circulation, is exactly equal to 180 English pharmaceutical grains.

" The half rupee and quarter rupee (silver) of the new currency are equal to 90 and 45 grains each.

" The new copper *pice* is equal to 100 grains.

" The quarter rupee (silver) we divide into 45 equal parts, each termed one grain."

" Having thus derived the grain weight equivalent to one grain troy, other denominations of weights are formed, corresponding with the English apothecaries weight, which weights are to be used in dispensing medicines."

ENGLISH MEASURES.

Before the passing of the Act, 5th & 6th William IV. cap. 63, in 1835, there were several measures of extension and capacity employed in this country. Laws had frequently been passed, from an early period in our history, for the regulation of these, in common with weights. King Henry I. commanded that the ulna, or ancient ell, which answers to the modern yard, should be made of the exact length of his own arm; and by the statute called "Compositio Ulnarum et Perticarum," it was enacted that 3 grains of barley make one inch; 12 inches one foot; 3 feet one yard; and 5½ yards one perch.

LONG MEASURE.

1 inch
12= 1 foot.
36= 3 = 1 yard.
72= 6 = 2 = 1 fathom.
198= 16½= 5½= 1 pole, perch, or rod.
7920= 660 = 220 = 40 = 1 furlong.
63360= 5280 =1760 =320 = 8=1 mile.
190080=15840 =5280 =960 =24=3=1 league.

CORN MEASURE.

1 pint.
2= 1 quart.
4= 2= 1 pottle.
8= 4= 2= 1 gallon.
16= 8= 4= 2= 1 peck.
64= 32= 16= 8= 4= 1 bushel.
512= 256= 128= 64= 32= 8= 1 quarter.
2560=1280= 640=320=160=40= 5=1 load, wey, or ton.
5120=2560=1280=640=320=80=10=2=1 last.

The gallon of this measure contains 268·8 cubic inches, and the bushel, which was called the Winchester bushel, 2150·42 cubic inches.

ALE AND BEER MEASURE.

1 pint.
2= 1 quart.
8= 4= 1 gallon.
288=144= 36=1 barrel.
432=216= 54=1½=1 hogshead.
576=288= 72=2 =1⅓=1 puncheon.
864=432=108=3 =2 =1½=1 butt.
1728=864=208=6 =4 =3⅓=2=1 tun.

The gallon of this measure contains 282 cubic inches.

WINE MEASURE.

1 pint.
2= 1 quart.
8= 4= 1 gallon.
336= 168= 42=1 tierce.
504= 252= 63=1½=1 hogshead.
672= 336= 84=2 =1⅓=1 puncheon.
1008= 504=126=3 =2 =1½=1 pipe or butt.
2016=1008=252=6 =4 =3 =2=1 tun.

The gallon of this measure contains 231 cubic inches. The wine gallon and ale gallon have the same proportion to each other, that the troy pound and avoirdupois pound have.

Imperial Measure.—By the Act, 5th Geo. IV. cap. 74, already referred to, it is enacted, "That from and after the first day of May, 1825, the straight line or distance between the centres of the two points in the gold studs in the straight brass rod, now in the custody of the Clerk of the House of Commons, whereon the words and figures, 'standard yard, 1760,' are engraved, shall be, and the same is hereby declared to be the original and genuine standard of that measure of length or lineal extension called a yard; and that the same straight line or distance between the centres of the said two points in the said gold studs in the said brass rod, the brass being at the temperature of 62 degrees of Fahrenheit's thermometer, shall be, and is hereby denominated, the 'imperial standard yard;' and shall be and is hereby declared to be the unit or only standard measure of extension, wherefrom or whereby all other measures of extension whatsoever, whether the same be lineal, superficial, or solid, shall be derived, computed, and ascertained; and that all measures of length shall be taken in parts or multiples, or certain proportions of the said standard yard; and that one-third part of the said standard yard shall be a foot, and the twelfth part of such foot shall be an inch; and that the pole or perch in length shall contain 5½ such yards, the furlong 220 such yards, and the mile 1760 such yards."

"And whereas it is expedient that the said standard yard, if lost, destroyed, defaced, or otherwise injured, should be restored of the same length, by reference to some invariable natural standard: and whereas it has been ascertained by the Commissioners appointed by his Majesty to inquire into the subject of weights and measures, that the said yard hereby declared to be the imperial standard yard, when compared with a pendulum vibrating seconds of mean time in the latitude of London, in a vacuum at the level of the sea, is in the proportion of thirty-six inches to thirty-nine inches and one thousand

" three hundred and ninety-three ten thousandth parts of an inch; " (36 : 39.1393); be it therefore enacted and declared, that if at any " time hereafter the said imperial standard yard shall be lost, or " shall be in any manner destroyed, defaced, or otherwise injured, " it shall and may be restored by making, under the direction of " the Lord High Treasurer, or the Commissioners of his Majesty's " Treasury of the United Kingdom of Great Britain and Ireland, " or any three of them, for the time being, a new standard yard, " bearing the same proportion to such pendulum as aforesaid, as " the said imperial standard yard bears to such pendulum."

" And be it further enacted, that from and after the first day " of May, 1825, the standard measure of capacity, as well for " liquids as for dry goods not measured by heaped measure, shall " be the gallon, containing ten pounds avoirdupois weight of distilled water weighed in air, at the temperature of 62° Fahr., the " barometer being at thirty inches; and that a measure shall be " forthwith made of brass, of such contents as aforesaid, under " the directions of the Lord High Treasurer, or the Commissioners " of his Majesty's Treasury of the United Kingdom, or any three " or more of them, for the time being; and such brass measure " shall be, and is hereby declared to be, the imperial standard " gallon, and shall be, and is hereby declared to be, the unit and " only standard measure of capacity, from which all other measures of capacity to be used, as well for wine, beer, ale, spirits, " and all sorts of liquids, as for dry goods not measured by " heaped measure, shall be derived, computed, and ascertained; " and that all measures shall be taken in parts or multiples, or " certain proportions of the said imperial standard gallon; and " that the quart shall be the fourth part of such standard gallon, " and the pint shall be one-eighth of such standard gallon, and " that two such gallons shall be a peck, and eight such gallons " shall be a bushel, and eight such bushels a quarter of corn or " other dry goods, not measured by heaped measure."

And by the Act passed in September, 1835, (5th & 6th William IV. cap. 63), it is enacted, " That from and after the passing of " this Act, the measure called the Winchester bushel, and the " lineal measure called the Scotch ell, and all local or customary " measures, should be abolished; and every person who shall sell, " by any denomination of measure other than one of the imperial " measures, or some multiple, or some aliquot part, such as half, " the quarter, the eighth, the sixteenth, or the thirty-second parts " thereof, shall, on conviction, be liable to a penalty not exceeding the sum of forty shillings for every such sale: provided " always, that nothing herein contained shall prevent the sale of " any articles in any vessel, where such vessel is not represented " as containing any amount of imperial measure, or of any " fixed, local, or customary measure heretofore in use."

In the adoption of the new imperial measure, there is no exception made for medicines, as in the case of weights; and the use of any other than the imperial measure, is therefore illegal in the sale of these as well as every other article of commerce.

IMPERIAL MEASURE.

	Equivalents in Avoirdupois weight.	Equivalents in Troy weight,
	Of distilled water at 62° Fahrenheit.	
1 pint - - -	1·25 lb.	8750 grains.
2= 1 quart - -	2·5 „	17500 „
8= 4= 1 gallon -	10· „	70000 „
16= 8= 2= 1 peck -	20· „	140000 „
64= 32= 8= 4=1 bushel	80· „	560000 „
512=256=64=32=8=1 quarter	640· „	4480000 „

APOTHECARIES' MEASURE.

(*Adopted by the London and Edinburgh Colleges.*)

	Equivalents in Troy grains.
1 minim - - - - -	0·91
60= 1 fluidrachm - - - -	54·7
480= 8= 1 fluidounce - - -	437·5
9600= 160= 20=1 pint - - -	8750·
76800=1280=160=8=1 gallon - - -	70000·

APOTHECARIES MEASURE.

(*Adopted by the Dublin College in their Pharmacopœia of* 1826).

	Equivalents in Troy grains of distilled water at 60° Fahr. (Dublin Pharm., 1826.)			Equivalents in Troy grains. (Christison's Dispensatory.)	
1 grain measure	1	grain	very nearly	0·95	grains
1 scruple measure	19	„	„	18·948	„
1 drachm measure	57	„	„	56·95	„
1 ounce measure	456·5	„	„	455·6075	„
1 pint measure	7291·	„	„	7289·725	„
1 gallon measure	58327·5	„	„	58317·798	„

The Dublin College direct, that wherever the term *Libra* occurs n their Pharmacopœia of 1826, as applied to liquids, it is to be nderstood as *a pint by measure.*

Relation between the Old, or Wine Measure, formerly used in Medicine, and the New or Imperial Measure.

WINE MEASURE.

		Equivalents in cubic inches.		Equivalents in Troy grains of distilled water at 62° Fahr.
1 gallon	=	231·	=	58317·798
1 quart	=	57·75	=	14579·4495
1 pint	=	28·875	=	7289·72475
16 ounces	=	28·875	=	7289·72475
1 ounce	=	1·8046	=	455·6075

IMPERIAL MEASURE.

		Equivalents in cubic inches.		Equivalents in Troy grains of distilled water at 62° Fahr.
1 gallon	=	277.274	=	70000
1 quart	=	69·3185	=	17500
1 pint	=	34·65925	=	8750
16 ounces	=	27·72740	=	7000
1 ounce	=	1·73296	=	437·5

The weight of 1 cubic inch of distilled water weighed in air at 62° Fahr. is 252·458 Troy grains.

FOREIGN MEASURES.

OLD FRENCH MEASURE, CALLED PARIS LONG MEASURE.

The French toise - - = 6·3945 English feet.
The Paris royal foot of 12 inches =12.7895 English inches.
The inch - - = 1·0657 „ „
The line, or $\frac{1}{12}$ of an inch = ·0888 „ „
The $\frac{1}{12}$ of a line - - = ·0074 „ „

To reduce Paris feet or inches into English, multiply by - - - - - } 1·065977
To convert English feet or inches into Paris, divide by - - - - - }

To reduce Paris cubic feet or inches to English, multiply by - - - - - } 1·211278
To convert English cubic feet or inches to Paris, divide by - - - - }

OLD FRENCH MEASURES OF CAPACITY.

Poisson	=	3·631	English cubic inches.
Paris pint	=	58·145	,, ,,
Litron	=	49·617	,, ,,
Boisseau	=	793·856	,, ,,
Minot	=	1·378	cubic feet.
Mine	=	2·756	,,
Setier	=	5·512	,,
Muid	=	66·146	,,

To reduce the Paris pint to the English imperial pint, divide by - - - - -	1·677618
To convert the English imperial pint to the Paris pint, multiply by - - - -	

NEW FRENCH MEASURES, CALLED THE METRICAL OR DECIMAL MEASURES.

The use of any other measures but these was made illegal by the law passed in 1837, and which came into operation in January, 1840.

FRENCH MEASURES OF EXTENSION.

(*The French measure being at 32° Fahr., and the English at 62° Fahr.*)

		English inches.		miles.	furls.	yards.	feet.	inches.
Millimetre	=	·03937						
Centimetre	=	·39371						
Decimetre	=	3·93710						
Metre	=	39·37100	=	0	0	1	0	3·7
Decametre	=	393·71000	=	0	0	10	2	9·7
Hectometre	=	3937·10000	=	0	0	109	1	1
Kilometre	=	39371·00000	=	0	4	213	1	10·2
Myriametre	=	393710·00000	=	6	1	156	0	6

FRENCH MEASURES OF CAPACITY.

	English cubic inches.	English Apothecaries Measure. galls.	pts.	ozs.	drs.	m.
Millitre . .	·0610					16·3
Centilitre . .	·6103				2	42
Decilitre . .	6·1028			3	3	2
Litre . . .	61·028		1	15	1	43
Decalitre . .	610·28	2	1	12	1	16
Hectolitre . .	6102·8	22	0	1	4	48
Kilolitre . .	61028·	220	0	12	6	24
Myrialitre . .	610280·	2200	7	13	4	48

SPECIFIC GRAVITY.

The determination of the specific gravity of a body, consists in estimating the weight of a given volume of it, as compared with an equal volume of some other body. The bodies usually taken as the standards of comparison, are, *pure water* for solids and liquids, and *atmospheric* air for gases.

The specific gravity of a solid is determined, by first weighing it in the ordinary manner, with an accurate balance suspended in the air; then attaching a horse-hair or fine silken thread to the solid body, immersing it in pure distilled water, and weighing it while thus immersed. The weight of the body in air, divided by the difference between its weight in air and its weight in water, will be its specific gravity. Thus a piece of lead is found to weigh 398 grains in air. When immersed in water, its weight is 362·4 grains; and the difference between these two weights, namely, 35·6, is the weight of the volume of water displaced by the lead, or of a volume of water equal to that of the lead. The volume of water being taken as unity, the specific gravity of the lead is found by the following rule of three sum:—

35·6 : 1 : : 398 : 11·176 the specific gravity of the lead.

In taking the specific gravity of *a solid substance lighter than water*, some modification of the process is required, but we have, nevertheless, the same preliminary points to determine; first, the weight of the substance in air; and secondly, the weight of an equal volume of water. This may be illustrated by taking the specific gravity of a piece of wax. The weight of the wax in air is 105·4 grains. On immersing the wax in water, two pressures are exerted,—a pressure downwards equal to the gravity or weight of the wax, and a pressure upwards equal to the weight of the volume of water displaced by the wax; but the specific gravity of water being greater than that of wax, the upward pressure preponderates, and the wax rises to the surface. Thus we find, that a volume of water equal to that of the wax, weighs as much as the wax, and something more. We must ascertain how much more, and this is done in the following manner:—Some body heavier than water, and the weight of which in water is known, is attached to the wax, and the two bodies are weighed in water together. A piece of lead may be used for this purpose. The lead alone weighs 378 grains in water; with the wax attached to it, the weight in water is 372·4 grains, making a difference of 5·6 grains; and this 5·6 grains is equal to the excess of the upward over the downward pressure on the wax when immersed in water. Thus a volume of water equal to that of the wax weighs 5·6 grains more than the wax, or 105·4 + 5·6 = 111 grains.

Then, 111 : 1 : : 105·5 : 0·949, the specific gravity of the wax.

It sometimes happens that the solid substance, the specific gravity of which is to be determined, is *in powder*, or *in several small particles*. In such cases, it is found convenient to proceed as in the following method of taking the specific gravity of calomel:—

100 grains of calomel are introduced into a specific gravity bottle, which holds 1000 grains of distilled water; the bottle is filled up with water, and the weight of the contents is found to be 1083·7 grains; deducting the weight of the calomel (100 grains) from this, the remainder (983·7 grains) will be the weight of the water in the bottle, and the difference (16·3 grains) between this and 1000 grains, the weight of the whole contents of the bottle when filled with distilled water, is the weight of a volume of water equal to the volume of the calomel.

Then, 16·3 : 1 : : 100 : 6·03, the specific gravity of the calomel.

In taking *the specific gravity of substances soluble in water*, other modifications of the process are required. Sometimes the substance may be covered with a thin coating of varnish, so as to protect it from the action of the water. This method answers very well for blue pill, which may be brushed over with a strong tincture of mastic, and then proceeded with as in the case of the lead. In other instances, however, it is necessary to pursue a different course. Thus, any powder that is soluble in water, must have its specific gravity taken, in the first instance, with reference to some liquid in which it is not soluble. Spirit of wine, oil of turpentine, or olive oil, may be used in such cases. The process may be illustrated by describing the method of taking the specific gravity of guano in oil of turpentine.

In the first place, the specific gravity of the oil of turpentine is ascertained to be 0·874. Then 100 grains of guano are introduced into a specific gravity bottle, as in the case of the calomel; and the bottle being filled up with oil of turpentine, the weight of the contents is found to be 922·7 grains, from which, deducting 100 grains, the remainder (842·7 grains) will represent the oil not displaced by the guano; and this, deducted from 874 grains, the quantity of oil the bottle is capable of holding, leaves 51·3 grains as the weight of a volume of oil of turpentine equal to that of the guano. Now, 874 : 51·3 : : 1000 : 58·7, the weight of a volume of water equal to that of the guano.

Then 58·7 : 1: : 100 : 1·7, the specific gravity of the guano.

The methods by which *the specific gravities of liquids* are usually determined, may be divided into two classes:—

1st. Those which consist in filling any suitable vessel with the liquid to be estimated; ascertaining the weight of the contents, and dividing this by the weight of the same volume of water.

2ndly. Those which consist in displacing a portion of the liquid by some solid body floating in it, and estimating the specific gravity according to the weight and volume of the substance immersed, as compared with its immersion in water.

In the first case, the instruments employed are, a specific gravity bottle, and an ordinary balance.

In the second case, the instruments used may be comprehended under the general terms of *hydrometers* or *aräometers*. These, however, are distinguished from each other, for there are many varieties of them, by different names, according to the particular purpose for which they are respectively intended, or from some peculiarity in their construction.

The specific gravity bottle affords the most accurate means of determining the comparative densities of liquids. It consists, usually, of a globular bottle with a flat bottom, and a slender neck, which holds exactly 1000 grains of distilled water at a certain fixed temperature. It is very easy at any time to test the accuracy of one of these bottles by a single experiment, and having ascertained that the bottle is correctly adjusted with regard to distilled water, the indications afforded with any other liquid will be equally trustworthy. The weight in grains, of the quantity of any liquid filling such bottle, will indicate its specific gravity.

Hydrometers, or *Aräometers*, are floating instruments, and their application for the purpose of determining the specific gravities of liquids, depends upon the fact, that a body immersed in any liquid, sustains a pressure from below upwards, equal to the weight of the volume of the liquid displaced by such body.

The use of hydrometers for determining the specific gravities of liquids, has been traced back to a period about 300 years before Christ; an instrument of this kind being described as the invention of Archimedes, the Sicilian mathematician. It subsequently fell into disuse, but was again brought into notice by Basil Valentine.

There are two kinds of hydrometers which may be taken as the types of all the different varieties in regard to construction:—

1st. Those which are always immersed into the liquids to be tried, to the same depth, and to which weights are added to adjust the instrument to the density of any particular liquid. Of this description are Fahrenheit's, Nicholson's, and Guyton de Morveau's hydrometers.

2nd. Those which are always used with the same weight, but which sink into the liquids to be tried, to different depths, according to the densities of the liquids. These usually have graduated scales attached to their stems. Of this description are the common glass hydrometers generally, including those of Baumé, Cartier, Gay Lussac, Twaddle, Zanetti, &c., and the specific gravity beads.

Sikes's, and Dicas's hydrometers combine the principles of both types, having moveable weights and graduated scales.

Hydrometers may also be divided into two classes, as follows :—

First. Those having a general application for determining the comparative densities of any liquids ;

Second. Those intended for special application, as for estimating the comparative strengths of spirits, or the comparative densities of syrups, oils, &c.

Fahrenheit's, Nicholson's, Guyton de Morveau's, and the common glass hydrometers, including Baumé's, Cartier's, Zanetti's, and the specific gravity beads, belong to the first class.

Gay Lussac's, Sikes's, and Dicas's hydrometers, the Saccharometer, Urinometer, and Elaëometer, belong to the second class.

Fahrenheit's Hydrometer, consists of two glass bulbs blown in a glass tube, like a common hydrometer, excepting that the upper bulb is larger, and the stem, which is small, is terminated at the top in a cup or funnel. It has a mark on the middle of the stem, indicating the point at which the instrument is to be made to float, by means of weights put into the cup.

Nicholson's Hydrometer, is a modification of Fahrenheit's. It is made of brass, and consists of a hollow globe, to which is fixed a slender stem surmounted by a cup ; on the opposite side of the globe is another cup fixed in a kind of stirrup, and loaded so that this may always form the lowest point of the instrument when immersed in any liquid. There is a mark on the middle of the upper stem, indicating the point at which the instrument is to be nade to float. A certain weight is introduced into the cup, to ause the instrument to sink to the proper mark in distilled water. On immersing the hydrometer into any other liquid, more or ess weight will have to be put into the cup, according as such quid is more or less dense than water. Thus the relative densies of liquids is determined.

This instrument is also applicable for taking the specific graves of solids. If the solid substance be put into the cup as part f the weight required to sink the hydrometer in distilled water, he weight of the substance in air is ascertained ; and if it be then ut into the lower cup, immersed in the water, and the instrumen again adjusted, its weight in water is ascertained; and from these its specific gravity is calculated.

Guyton de Morveau's hydrometer is similar to Fahrenheit's.

Baumé's hydrometers are used extensively in this country, as well as in France, and are applicable for all kinds of liquids. There are two distinct instruments, one for liquids lighter than water, and the other for liquids heavier than water. The latter is, for distinction, called the *Acidometer* or *Saccharometer*, (*pèse-acide* or *pèse-sirop*); the former, the *Spirit Hydrometer* (*pèse-esprit*).

Baumé's Acidometer is made in the form of the common hydrometers. It consists of a glass tube terminated at the lower end by two bulbs, the lowest bulb being much smaller than the other, and intended to contain the ballast with which the instrument is loaded. The scale is marked on a slip of paper, or of ivory, fixed in the tube, and is adjusted in the following manner:—The top of the tube being open, the slip of paper on which the scale is to be marked is put into the stem, and the instrument is then immersed in pure distilled water; quicksilver is now dropped into the lower ball until the instrument sinks so low in the water that only the top of the stem remains above the surface, and a mark is made on the glass denoting exactly the point to which it sinks. The instrument is now taken out of the pure water, and put into a solution of fifteen parts of common salt in eighty-five parts of distilled water, this solution being at the same temperature as the water in which the instrument was previously immersed; the point to which it sinks in this solution is to be marked on the stem as before, and the distance between the two marks being taken with a pair of compasses, and transferred to the slip of paper, the first is made the zero or 0, and the other the 15th degree of the scale. This distance being divided into fifteen equal parts or divisions, each division is called a degree, and the scale is completed by adding as many more degrees as the length of the stem will admit of. This being done, the slip of paper is again introduced into its place, and so fixed that the zero (0) of the scale shall be exactly opposite the first mark made on the glass. The end of the stem is now sealed with the flame of a blow pipe.

Baumé's Spirit Hydrometer is similar in form to the acidometer, but the weight of the instrument, and the scale, are different. In this case, the hydrometer is first immersed, as before, in pure distilled water; but it is made to float, so that the greater part of the stem shall be above the surface of the water. This point is marked, and the instrument is then transferred to a solution of ten parts of common salt in ninety parts of water, when another mark is made. The distance between these marks is made ten degrees of the scale, which are divided with the compasses, and marked on the slip of paper, as in the other case, the floating point in the solution of salt being made the zero, and the degrees carried upwards from this point.

The temperature at which these instruments were originally adjusted by Baumé, was 10° Reaumur, or 12·5 Centigrade; but those made in England are usually adjusted at 60° Fahrenheit. It is sometimes important to be aware of this difference.

Cartier's Hydrometer is much used in France. It is only applicable for liquids lighter than water. This instrument is a modification of Baumé's spirit hydrometer, the form of the instrument being the same, and the same point being taken as the zero of the scale; but the space which in Baumé's scale is divided into 32°, is in Cartier's divided into 30°.

It is becoming the common practice in this country to have the scales of hydrometers marked with the specific gravities intended to be indicated, and this is by far the most convenient kind of hydrometer for general use.

Twaddle's Hydrometers are much used in Scotland, and occasionally in England. They are made of glass like the common hydrometers, and are sold in sets of six. Each degree on the scale is equal to 0·005 of specific gravity, so that the specific gravity of a liquid is found with these hydrometers, by multiplying the number of degrees indicated by 5, and adding 1000. Thus, 10° by Twaddle's hydrometer, × 5 + 1000=1·050 specific gravity.

Zanetti's Hydrometers, which are made at Manchester, are also sold in sets of six. With these the specific gravity is got by adding a cypher to the number of degrees indicated.

Specific gravity beads, sometimes called *Lovi's beads*, are hollow sealed globes of glass, about the size of small pistol-bullets. Each bead is a small hydrometer, intended to indicate one fixed density, by its remaining half-way between the top and bottom of the liquid into which it is introduced. These beads are sold in sets, each one being marked with the specific gravity it is to indicate at a certain fixed temperature. They are very useful in making mixtures of any required densities, as, for instance, in making test acids.

Gay Lussac's Alco-ometre is frequently employed in France; it is adapted only for estimating the strength of spirits. The instrument is made like a common glass hydrometer, the scale of which is divided into 100 parts or degrees. The lowest division, marked 0, at the bottom of the scale, denotes the specific gravity of pure water at a temperature of 15° cent., and the highest division, at the top of the scale, the specific gravity of absolute alcohol at the same temperature. The intermediate degrees indicate the number of volumes of absolute alcohol in 100 volumes of the spirit tried. The instrument is accompanied by a table for correcting the numbers marked on the scale, when it is used at any other temperature than that of 15° cent.

Sikes's Hydrometer is used exclusively in the collection of the spirit revenue. It consists of a spherical ball or float, and an upper and a lower stem made of brass; the upper stem has ten principal divisions, numbered 1, 2, 3, &c., which are each subdivided into five parts; the lower stem is made conical, and has a pear-shaped loaded bulb at its lower extremity. There are nine moveable weights, having the form of circular discs, and numbered 10, 20, 30, and so on to 90. Each of the circular weights is cut into its centre, so that it can be placed on the inferior conical stem, and slid down to the bulb; but in consequence of the enlargement of the cone, they cannot slip off at the bottom, but must be drawn up to the thin part for this purpose. The instrument is adjusted to strong spirit, specific gravity ·825, at 60° Fahr., this being reckoned as standard alcohol. In this spirit the instrument floats at the first division, 0, or zero, without a weight. In weaker spirit, having a greater density, the hydrometer will not sink so low, and if the density be much greater, it will be necessary to add one of the weights to cause the entire immersion of the bulb of the instrument. Each weight represents so many principal divisions of the stem as its number indicates: thus, the heaviest weight, marked 90, is equivalent to 90 divisions of the stem, and the instrument with this weight added floats at 0 in distilled water. As each principal division on the stem is divided into five, the instrument has a range of 500 degrees between *standard alcohol*, specific gravity ·825, and water. In using this instrument, it is immersed in the spirit, and pressed down by the hand to 0, till the whole divided part of the stem be wet. The force of the hand required to sink it will be a guide in selecting the proper weight. Having taken one of the circular weights, which is necessary for this purpose, it is slipped on the conical stem. The instrument is again immersed and pressed down as before to 0, and is then allowed to rise and settle at any point of the scale. The eye is then brought to the level of the surface of the spirit, and the part of the stem cut by the surface, *as seen from below*, is marked. The number thus indicated by the stem is added to the number of the weight employed, and with this sum at the side, and the temperature of the spirits at the top, the strength *per cent.* is found in a table which accompanies the hydrometer. The strength is expressed in numbers denoting the excess or deficiency *per cent.* of proof spirit in any sample, and the number itself, having its decimal point removed two places to the left, becomes a factor, whereby the gauged contents of a cask or vessel of such spirit being multiplied, and the product being added to the gauged contents if over proof, or deducted from it if under proof, the result will be the actual quantity of proof spirit contained in such cask or vessel.

Dicas's Hydrometer is similar in construction to Sikes's, and it is used in a similar manner, with the same result, indicating the relation of the spirit tried to standard proof spirit.

It is the practice in commerce to designate the strength of spirit as so many degrees above or below proof, the government having fixed upon what is called *proof spirit* as the standard in comparison with which the strength of all spirit shall be estimated. The term *proof* is said to have been derived from the ancient practice of trying the strength of spirit by pouring it over gunpowder in a cup, and then setting fire to the spirit; if, when the spirit had burned away, the gunpowder exploded, the spirit was said to be *over proof;* if, on the other hand, the gunpowder failed to ignite, in consequence of the water left from the spirit, it was said to be *under proof.* The weakest spirit capable of firing gunpowder in this way was called *proof spirit*: but it requires a spirit nearly of the strength of what is now called rectified spirit to stand this test. The *standard proof spirit* of the Excise is defined by law (56 Geo. III. cap. 140) to be "*that which at a temperature of* 51° *by Fahrenheit's thermometer, weighs exactly twelve-thirteenth parts of an equal measure of distilled water.*" This will have a specific gravity of ·923 at 51° Fahr., or about ·920 at 60° Fahr. The *standard alcohol* of the Excise is spirit, the specific gravity of which is ·825 at 60° Fahr. By "spirit 60 degrees over proof," is understood a spirit, 100 measures of which added to 60 measures of water, will form *standard proof spirit,* sp. gr. 920. By "spirit 10 degrees under proof," is understood a spirit, 100 measures of which mixed with 10 measures of standard alcohol, sp. gr. ·825, will form *standard proof spirit.*

Saccharometers, which are hydrometers intended for determining the density of syrups, are usually made and graduated in the same manner as Baumé's Acidometers, and differ only from these in being made smaller; but the scale is sometimes graduated to indicate the proportion of sugar in the solution.

The Urinometer, is a small hydrometer, originally suggested by Dr. Prout, for estimating the density of urine. The scale is divided into 60 degrees, the zero being the point at which it floats in distilled water. The numbers on the scale, added to 1000, the assumed sp. gr. of water, give the specific gravities at the respective points; thus, supposing the number cut by the surface of the liquid to be 30, this indicates a sp. gr. 1030. The letters H. S. on the back of the scale signify *healthy standard,* which ranges from 10° to 20° of the scale.

The Elaëometer is a very delicate glass hydrometer, intended for testing the purity of olive oil or oil of almonds, by determining their densities. The 0 or zero of the scale is the point at which the instrument floats in *oil of poppy seeds.* The point at which it floats in *pure olive oil,* is made the 50th degree, and the space between these two points is divided into 50 equal parts, and numbered accordingly. It floats at 38 or 38½° in *pure oil of almonds.*

The following tables have been drawn up for the purpose of showing the relations between the indications afforded by some of the foregoing instruments.

RELATION BETWEEN SPECIFIC GRAVITIES, AND DEGREES OF BAUMÉ'S HYDROMETER FOR LIQUIDS HEAVIER THAN WATER.

Sp. Gr.	Baumé.	Sp. Gr.	Baumé.	Sp. Gr.	Baumé.	Sp. Gr.	Baumé.
1·000 =	0	1·152 =	19	1·359 =	38	1·656 =	57
1·007	1	1·161	20	1·372	39	1·676	58
1·014	2	1·171	21	1·384	40	1·695	59
1·022	3	1·180	22	1·398	41	1·714	60
1·029	4	1·190	23	1·412	42	1·736	61
1·036	5	1·199	24	1·426	43	1·758	62
1·044	6	1·210	25	1·440	44	1·779	63
1·052	7	1·221	26	1·454	45	1·801	64
1·060	8	1·231	27	1·470	46	1·823	65
1·067	9	1·242	28	1·485	47	1·847	66
1·075	10	1·252	29	1·501	48	1·872	67
1·083	11	1·264	30	1·526	49	1·897	68
1·091	12	1·275	31	1·532	50	1·921	69
1·100	13	1·286	32	1·549	51	1·946	70
1·108	14	1·298	33	1·566	52	1·974	71
1·116	15	1·309	34	1·583	53	2·002	72
1·125	16	1·321	35	1·601	54	2·031	73
1·134	17	1·334	36	1·618	55	2·059	74
1·143	18	1·346	37	1·637	56	2·087	75

HYDROMETRICAL EQUIVALENTS.

Sp. Gr. at 60° Far.	100 parts contain of Alcohol Sp. Gr. 796. By Weight.	Water.	1000 pts. contain of Standard Alc. Sp. Gr. 825.	Sikes.	Baumé.	Cartier.	Per cent. of Alcohol, Sp. Gr. 796 by volume. Gay Lussac.
796	100	0			46·5	43·48	100
797	99·5	·5					99·75
798	99	1			46	43·06	99·50
799	98·67	1·33					99·25
800	98·33	1·67					99
801	98	2					98·75
802	97·67	2.33			45	42·14	98·50
803	97·33	2·67				42	98·28
804	97	3					98·15
805	96·67	3.33					98
806	96·33	3·67					97·80
806·5	96·17	3·83			44	41·22	97·70

Sp. Gr. at 60° Far.	100 parts. contain of Alcohol Sp. Gr. 796	100 parts. contain of Water.	1000 pts. contain of Standard Alc. Sp. Gr. 825	Sikes.	Baumé.	Cartier.	Per cent. of Alcohol, Sp. Gr. 796 by volume. Gay Lussac.
	By weight.						
807	96	4					97·60
808	95·5	4·5				41	97·40
809	95	5					97·29
809·5	94·89	5.10					97·10
810	94·67	5·33					97
811	94·33	5·67			43	40·34	96·75
812	94	6					96·50
813	93·67	6·33				40	96·25
814	93·33	6·67					96
815	93	7					95·75
816	92·5	7·5			42	39·40	95·50
817	92	8					95·25
818	91·67	8·33					95
818·6	91·5	8·5				39	94·90
819	91·33	8·67					94·75
820	91	9					94·50
821	91·5	9·5			41	38·46	94·25
822	90	10					94
823	89·67	10·33				38	93·75
824	89·33	10·67					93·50
825	89	11	1000	63· O.P.	40	37·55	93·25
826	88·5	11·5	993	62			93
827	88	12	988·5	61·5		37	92·6
828	87·67	12·33	984	61	39·5		92·3
829	87·33	12·67	979·5	60·5	39	36·63	91
830	87	13	975	60			91·7
831	86·5	13·5	970·5	59·5	38·5	36·17	91·35
832	86	14	966	59		36	91
833	85·67	14·33	961·5	58·3			90·65
834	85·33	14·67	957	58	38	35·72	30·3
835	85	15	953	57·5			90
836	84·67	15·33	949	57	37·5	35·26	89·7
837	84·33	15·67	944·5	56·5			89·35
837·6	84·25	15·75	942·5	56·3		35	89·20
838	84	16	940	56			89
839	83·5	16·5	936	55·5	37	34·80	88·75
840	83	17	932	55			88·5
841	82·67	17·33	928	54·5	36·5		88·25
842	82·33	17·67	924	54			88
843	82	18	920	53·5		34·94	87·65
844	81·67	18·33	916	53		34	87·3
845	81·33	18·67	912	52·5	36	33·88	87

Sp. Gr. at 60° Far.	100 parts contain of Alcohol Sp. Gr. 796.	100 parts contain of Water.	1000 parts contain of Standard Alc. Sp. Gr. 825.	Sikes.	Baumé.	Cartier.	Per cent. of Alcohol, Sp. Gr. 796 by volume. Gay Lussac.
	By Weight.						
846	81	19	908	52 O P.			86·7
847	80·5	19·5	903	51	36·5	33·42	86·35
848	80	20	898	50			86
849	79·67	20·33	893	49·5			85·65
850	79·33	20·67	888	49	35	33	85·3
851	79	21	883	48·5			85
852	78·5	21·5	878	48	34·5	32·43	84·7
853	78	22	873	47·5			84·35
854	77·5	22·5	868	47			84
855	77	23	862·5	46·5	34	32·04	83·65
856	76 5	23·5	857	46			83·3
857	76	24	853	45·5	33·5	31·58	83
858	75·67	24·33	849	45			82·7
859	75·33	24·67	844·5	45			82·35
860	75	25	840	45	33	31·13	82
861	74·67	25·33	836·5	44·5		31	81·7
862	74·33	25·67	833	44			81·3
862·5	74·16	25·84	830·5	43·75	32·5	30·76	80
863	74	26	828	43·5			80·8
864	73·5	26·5	823	43			80·3
865	73	27	818	42·5	32	30·21	79·95
866	72·5	27·5	813	42			79·6
867	72	28	810	41			79·3
867·5	71·83	28·17	808·5	40·5	31·5	29·78	79·15
868	71·67	28·33	807	40			79
869	71·33	28·67	802·5	39·5			78·65
870	71	29	798	39	31	29·29	78·3
871	70·5	29·5	792·5	38·5			78
872	70	30	787	38		29	77·7
873	69·5	30·5	781·5	37	30·5	28·83	77·35
874	69	31	776	36			77
875	68·67	31·33	772	35			76·5
876	68·33	31·67	768	34	30	28.38	76
877	68	32	762·5	33			75·65
877·5	67·75	32·25	759·25	32·5		28	75·5
878	67·5	32·5	757	32			75·3
878·5	67·25	32·75	753·75	31·5	29·5	27·91	75
879	67	33	751·5	31			74·8
880	66·5	33·5	746	30			74·3
881	66	34	742	29·5	29	27·44	74
882	65·5	34·5	738	29			73·7
883	65	35	733·5	28·5		27	73·35

Sp. Gr. at 60° Far.	100 parts contain of		1000parts contain of Standard Alc. Sp. Gr. 825.	Sikes.	Baumé.	Cartier.	Per cent. of Alcohol, Sp. Gr. 796 by volume. Gay Lussac.
	Alcohol. Sp. Gr. 796. By Weight.	Water.					
883·5	64·83	35·17	731·25	28·25 O.P.	28·5	26·99	73·17
884	64·67	35·33	729	28			73
885	64·33	35·67	724	27·5			72·5
886	64	36	719	27	28	26·53	72
887	63·67	36·33	714	26			71·5
888	63·33	36·67	709	25			71
889	63	37	704	24·5			70·65
890	62·5	37·5	699	24	27·5	26·07	70·3
891	62	38	694	23			69.8
892	61·5	38·5	689	22			69·3
893	61	39	644·5	21	27	25·61	69
894	60·67	39·33	680	20			68·7
895	60·33	39·67	675·5	19·5			68·35
895·5	60·16	39.84	673·25	19·25	26·5	25·15	68·17
896	60	40	671	19		25	68
897	59·5	40·5	666·5	18			67·65
898	59	41	662	17	26	24·69	67·3
899	58·5	41·5	655·5	16			67
900	58	42	649	15			66·7
900·5	57·75	42·25	647	14·75	25·5	24·23	66·52
901	57·5	42·5	645	14·5			66·35
901·5	57·25	42·25	643	14·25		24	66·17
902	57	43	641	14			66
903	56·5	43·5	636	13	25	23·77	65·5
904	56	44	631	12			65
905	55·5	44·5	626	11·5			64.5
906	55	45	621	11	24·5	23·31	64
907	54·5	45·5	616·5	10·5			63·65
908	54	46	612	10		23	63·3
909	53·5	46·5	607	9	24	22·85	62·65
910	53	47	602	8			62·3
911	52·5	47·5	595·5	7·5			61·9
912	52	48	591	7	23·5	22·39	61·5
913	51·67	48·33	586	6			61
914	51·33	48·67	581	5			60·5
915	51	49	576	4	23	21·94	60·
916	50·5	49·5	571	3			59·6
917	50	50	560·5	2			59·3
918	49·67	50·33	562	1	22·5	21·48	59
919	49·33	50·67	554	·5			58·5
20	49	51	550	Proof			58
21	48·5	51·5	545	1 U.P.	22	21·02	57·5

Sp. Gr. at 60° Fahr.	100 parts contain of By weight.		1000 pts. contain of Standard Alc. Sp. Gr. 825.	Sikes.	Baumé.	Cartier.	Per cent. of Alcohol, Sp Gr. 796 by volume. Gay Lussac.
	Alcohol Sp. Gr. 796.	Water.					
922	48	52	540	2 U. P.			57
923	47·5	52·5	535·5	3	21·5	20·56	56·5
924	47	53	531	4			56
925	46·5	53·5	526	5			55·5
926	46	54	521	6	21	20·10	55
927			515·5	6·5			
928	45	55	510	7			54
929	44·5	55·5	505	8			53·5
929·5	44·25	55·75	502·5	8·5	20·5	19·64	53·25
930	44	56	500	9			53
931	43·67	56·33	495·5	10			52·5
932	43·33	56·67	489	11			52
933	43	57	484	12	20	19·18	51·5
934	42·5	57·5	479	13		19	51
935	42	58	472·5	14			50·5
936	41·5	58·5	468	15	19·5	18·72	50
937	41	59	462	16			49·5
938	40·5	59·5	456	17			49
939	40	60	450	18	19	18·26	48·5
940	39·5	60·5	444	19			48
940·5	39·25	60·75	441	19·5		18	47·63
941	39	61	438	20			47·25
942	38·5	61·5	432	21	18·5	17·80	46·5
943	38	62	426·5	22			45
944	37·5	62·5	421	23			45·5
945	37	63	416	23·5	18	17·35	44·75
946	36·5	63·5	411	24			44
947	36	64	399	25		17	43·5
948	35·5	64·5	397	26	17·5	16·89	43
949	35	65	389·5	27			42·25
950	34·5	65·5	382	28			41·5
951	34	66	376	29·5	17	16·43	40
952	33·5	66·5	370	31			40·5
953	33	67	364	32·5			39·75
954	32·5	67·5	358	34			39
955	32	68	352	35	16·5	16·3	38·5
956	31·5	68·5	346	36		16	38
957	31	69	339·5	37·5			37·25
958	30	70	333	39			36·5
959	29·5	70·5	324	40·5	16	15·51	35·75
960	29	71	315	42			35
961	28·5	71·5	307·5	43·5			34·5

Sp. Gr. at 60° Fahr.	100 parts contain of Alcohol. Sp. Gr. 796. By weight.	Water.	1000 pts. contain of Standard Alc. Sp. Gr. 825.	Sikes.	Baumé.	Cartier.	Per cent. of Alcohol, Sp. Gr. 796 by volume, Gay Lussac.
962	28	72	300	45 U. P.	15·5	15	34
963	27	73	292·5	46·5			33
964	26·5	73·5	285	48			32
965	26	74	277·5	49·5	15.	14·59	31
966	25·5	74·5	270	51			30
967	25	75	261·5	52·5			29
968	24	76	253	54			28
968·5	23·75	76·25			14·5	14·13	27·5
969	23·5	76·5	244·5	55·5			27
970	23	77	236	57			26
971	22·5	77·5	227	58·5			25
972	22	78	218	60	14	13·67	24
973	21	79	209	62			23
974	20	80	200	64			22
975	19	81	195	66	13·5	13·21	21
976	18·5	81·5	190·5	68			20
977	18	82	183·5	70			19
978	17	83	175.	72	13	12·76	18
979	16	84	163	73·5			17
980	15·5	84·5	150	75			16
981	15	85	143	76			15
982	14	86	135	77	12·5	12·30	14
983	13·5	86·5	128	78·5			13
984	13	87	120	80			12
985	12·5	87·5	112	81			11·25
986	12	88	105	82	12	11·84	10·5
987	11	89	98	83·5			9·75
988	10	90	90	85			9
989	9	91	82	87	11·5	11·38	8
990	8	92	75	89			7
991	7	93	67·5	90·5			6·5
992	6	94	60	92			6
993	5·5	94·5	52·5	93·5	11	10·92	5
994	5	95	45	95			4
995	4	96	37·5	95·5			3·5
996	3·5	96·5	30	96	10·5	10·46	3
997	3	97	22·5	97			2
998	2	98	15	98			1
999	1	99	7·5	99			·5
000	0	100	0	100	10	10	0

QUANTITIES OF ANHYDROUS AND OF LIQUID SULPHURIC ACID CONTAINED IN MIXTURES OF OIL OF VITRIOL AND WATER AT DIFFERENT DENSITIES. (URE.)

Specific Gravity.	Liq. Acid Sp. Gr. 1·8485 in 100.	Dry Acid in 100 .	Specific Gravity.	Liq. Acid in 100.	Dry Acid in 100.
1·8485	100	81·54	1·5280	64	52·18
1·8475	99	80·72	1·5170	63	51·37
1·8460	98	79·90	1·5066	62	50·55
1·8439	97	79·09	1·4960	61	49·74
1·8410	96	78·28	1·4860	60	48·92
1·8376	95	77·46	1·4760	59	48·11
1·8336	94	76·65	1·4660	58	47·29
1·8290	93	75·83	1·4560	57	46·48
1·8233	92	75·02	1·4460	56	45·66
1·8179	91	74·20	1·4360	55	44·85
1·8115	90	73·39	1·4265	54	44·03
1·8043	89	72·57	1·4170	53	43·22
1·7962	88	71·75	1·4073	52	42·40
1·7870	87	70·94	1·3977	51	41·58
1·7774	86	70·12	1·3884	50	40·77
1·7673	85	69·31	1·3788	49	39·95
1·7570	84	68·49	1·3697	48	39·14
1.7465	83	67·68	1·3612	47	38·32
1·7360	82	66·86	1·3530	46	37·51
1·7245	81	66·05	1·3440	45	36·69
1·7100	80	65·23	1·3345	44	35·88
1·6993	79	64·42	1·3255	43	35·06
1·6870	78	63·60	1·3165	42	34·25
1·6750	77	62·78	1·3080	41	33·43
1·6630	76	61·97	1·2999	40	32·61
1·6520	75	61·15	1·2913	39	31·80
1·6415	74	60·34	1·2826	38	30·98
1·6321	73	59·52	1·2740	37	30·17
1·6204	72	58·71	1·2654	36	29·35
1·6090	71	57·89	1·2572	35	28·54
1·5975	70	57·08	1·2490	34	27·72
1·5868	69	56·26	1·2409	33	26·91
1·5760	68	55·45	1·2334	32	26·09
1·5648	67	54·63	1·2260	31	25·28
1·5503	66	53·82	1·2184	30	24·46
1·5390	65	53·00	1·2108	29	23·65

Specific Gravity.	Liq. Acid in 100.	Dry Acid in 100.	Specific Gravity.	Liq. Acid in 100.	Dry Acid in 100.
1·2032	28	22·83	1·0953	14	11·41
1·1956	27	22·01	1·0887	13	10·60
1·1876	26	21·20	1·0809	12	9·78
1·1792	25	20·38	1·0743	11	8·97
1·1706	24	19·57	1·0682	10	8·15
1·1626	23	18·75	1·0614	9	7·34
1·1549	22	17·94	1·0544	8	6·52
1·1480	21	17·12	1·0477	7	5·71
1·1410	20	16·31	1·0405	6	4·89
1·1330	19	15·49	1·0336	5	4·08
1·1246	18	14·68	1·0268	4	3·26
1·1165	17	13·86	1·0206	3	2·446
1·1090	16	13·05	1·0140	2	1·63
1·1019	15	12·23	1·0074	1	0·8154

QUANTITIES OF ANHYDROUS AND OF LIQUID NITRIC ACID CONTAINED IN MIXTURES OF NITRIC ACID AND WATER AT DIFFERENT DENSITES (URE).

Specific Gravity.	Liq. Acid Sp. Gr. 1·5, in 100.	Dry Acid in 100.	Specific Gravity.	Liq. Acid in 100.	Dry Acid in 100.
1·5000	100	79·700	1·4424	81	64·557
1·4980	99	78·903	1·4385	80	63·760
1·4960	98	78·106	1·4346	79	62·963
1·4940	97	77·309	1·4306	78	62·166
1·4910	96	76·512	1·4269	77	61·369
1·4880	95	75·715	1·4228	76	60·572
1·4850	94	74·918	1·4189	75	59·775
1·4820	93	74·121	1·4147	74	58·978
1·4790	92	73·324	1·4107	73	58·181
1·4760	91	72·527	1·4065	72	57·384
1·4730	90	71·730	1·4023	71	56·587
1·4700	89	70·933	1·3978	70	55·790
1·4670	88	70·136	1·3945	69	54·993
1·4640	87	69·339	1·3882	68	54·196
1·4600	86	68·542	1·3833	67	53·399
1·4570	85	67·745	1·3783	66	52·602
1·4530	84	66·948	1·3732	65	51·805
1·4500	83	66·155	1·3681	64	51·068
1·4460	82	65·354	1·3630	63	50·211

Specific Gravity.	Liq. Acid Sp. Gr. 1·5, in 100.	Dry Acid in 100.	Specific Gravity.	Liq. Acid in 100.	Dry Acid in 100.
1·3579	62	49·414	1·1770	31	24·707
1·3529	61	48·617	1·1709	30	23·900
1·3477	60	47·820	1·1648	29	23·113
1·3427	59	47·023	1·1587	28	22·316
1·3376	58	46·226	1·1426	27	21·519
1·3323	57	45·429	1·1465	26	20·722
1·3270	56	44·632	1·1403	25	19·925
1·3216	55	43·835	1·1345	24	19·128
1·3163	54	43·038	1·1286	23	18·331
1·3110	53	42·241	1·1227	22	17·534
1·3056	52	41·444	1·1168	21	16·737
1·3001	51	40·647	1·1109	20	15·940
1·2947	50	39·850	1·1051	19	15·143
1·2887	49	39·053	1·0993	18	14·346
1·2826	48	38·256	1·0935	17	13·549
1·2765	47	37·459	1·0878	16	12·752
1·2705	46	36·662	1·0821	15	11·955
1·2644	45	35·865	1·0764	14	11·158
1·2583	44	35·068	1·0708	13	10·361
1·2523	43	34·271	1·0651	12	9·564
1·2462	42	33·474	1·0595	11	8·767
1·2402	41	32·677	1·0540	10	7·970
1·2341	40	31·880	1·0485	9	7·173
1·2277	39	31·083	1·0430	8	6·376
1·2212	38	30·286	1·0375	7	5·579
1·2148	37	29·489	1·0320	6	4·782
1·2084	36	28·692	1·0267	5	3·985
1·2019	35	27·895	1·0212	4	3·188
1·1958	34	27·098	1·0159	3	2·391
1·1895	33	26·301	1·0106	2	1·594
1·1833	32	25·504	1·0053	1	0·797

VALUE AND ATOMIC COMPOSITION OF HYDROCHLORIC ACID AT DIFFERENT DENSITIES.

DAVY. (Temp. 40°. Bar. 30.)		THOMSON.		
Specific Gravity.	100 grains contain of hydroc. acid gas	Specific Gravity.	Real acid in 100 of liquid.	Atoms of water to 1 of acid.
1·21	42·43	1·203	40·66	6
1·20	40·80	1·179	37·00	7
1·19	38·38	1·162	33·95	8
1·18	36·36	1·149	31·35	9
1·17	34·34	1·139	29·13	10
1·16	32·32	1·128	27·21	11
1·15	30·30	1·119	25·52	12
1·14	28·28	1·112	24·03	13
1·13	26·26	1·106	22.70	14
1·12	24·24	1·100	21.51	15
1·11	22·30	1·096	20·44	16
1·10	20·20	1·090	19·47	17
1·09	18·18	1·086	18·59	18
1·08	16·16	1·082	17·79	19
1·07	14·14	1·087	17·05	20
1·06	12·12			
1·05	10·10			
1·04	8·08			
1·03	6·06			
1·02	4·04			
1·01	2·02			

SPECIFIC GRAVITY OF ACETIC ACID AT DIFFERENT DEGREES OF DILUTION.

(THOMSON.)

Atoms of Acid.		Atoms of Water.		Specific Gravity at 60°.
1	+	1	=	1·06296
1	+	2	=	1·07060
1	+	3	=	1·07084
1	+	4	=	1·07132
1	+	5	=	1·06820
1	+	6	=	1·06708
1	+	7	=	1·06349
1	+	8	=	1·05974
1	+	9	=	1·05794
1	+	10	=	1·05439

QUANTITIES OF AMMONIA IN SOLUTIONS OF DIFFERENT SPECIFIC GRAVITIES.

DAVY.

100 parts. Specific Gravity		of Ammonia
8750	contain	32·50
8875	,,	29·25
9000	,,	26·00
9054	,,	25·37
9166	,,	22·07
9255	,,	19·54
9326	,,	17·52
9385	,,	15·88
9435	,,	14·53
9476	,,	13·46
9513	,,	12·40
9545	,,	11·56
9573	,,	10·82
9597	,,	10·17
9619	,,	9·60
9612	,,	9·50

STRENGTHS OF SOLUTIONS OF AMMONIA OF DIFFERENT SPECIFIC GRAVITIES, AND THEIR RESPECTIVE BOILING POINTS.

DALTON.

Specific Gravity.	Grs. of Ammonia in 100 gr. of Liquid.	Boiling point.	Vol. of gas in one vol of liquid.
850	35·3	26	494
860	32·6	38	456
870	29·9	50	419
880	27·3	62	382
890	24·7	74	346
900	22·2	86	311
910	19·8	98	277
920	17·4	100	244
930	15·1	122	211
940	12·8	134	180
950	10·5	146	147
960	8·3	158	116
970	6·2	173	87
980	4·1	187	57
990	2·0	196	28

QUANTITY OF ANHYDROUS POTASSA CONTAINED IN SOLUTIONS OF DIFFERENT SP. GRAVITIES.

DALTON.

Specific Gravity.	Potassa per cent.	Boiling Point.
1·68	51·2	329°
1·60	46·7	290
1·52	42·9	276
1·47	39·6	265
1·44	36·8	255
1·42	34·4	246
1·39	32·4	240
1·36	29·4	234
1·33	26·3	229
1·28	23·4	224
1·23	19·5	220
1·19	16·2	218
1·15	13·0	215
1·11	9·5	214
1·06	4·7	213

QUANTITY OF ANHYDROUS SODA CONTAINED IN SOLUTIONS OF DIFFERENT SP. GRAVITIES.

DALTON.

Specific Gravity.	Dry Soda per cent.	Boiling Point.
1·85	63·6	600°
1·72	53·8	400
1·63	46·6	300
1·56	41·2	280
1·50	36·8	265
1·47	34·0	255
1·44	31·0	248
1·40	29·0	242
1·36	26·0	235
1·32	23·0	228
1·29	19·0	224
1·23	16·0	230
1·18	13·0	217
1·12	9·0	214
1·06	4·7	213

SPECIFIC GRAVITIES OF SOME OF THE PREPARATIONS ORDERED IN THE PHARMACOPŒIAS.

The London Pharmacopœia directs the Specific Gravity to be taken at a temperature of 62° Fahr. The Edinburgh and Dublin Pharmacopœias at 60° Fahr.

		Sp. Gr.
Acetum Destillatum	Edin.	1·005
———	Dublin	1·005
Acidum Aceticum	London	1·048
———	Edin.	1·063 to 1·068
———	Dublin	1·074
——— Dilutum	Dublin	1.005
——— Hydrochloricum	London	1·160
———	Edin.	1·170
———	Dublin	1·160
——— Dilutum	Edin.	1·050
———	Dublin	1·080
——— Hydrocyanicum	Dublin	·998
——— Nitricum	London	1·500
———	Edin.	1·500
——— Dilutum	London	1·080
———	Edin.	1·077
———	Dublin	1·280
——— Phosphoricum Dilutum	London	1·064
——— Sulphuricum	London	1·845
———	Edin.	1·845
———	Dublin	1·845
——— Sulphuricum venale	Dublin	1·850
——— Sulphuricum Dilutum	London	1·110
———	Edin.	1·090
———	Dublin	1·084
Æther Nitrosus	Dublin	0·900
——— Sulphuricus	London	0·750
———	Edin.	0·735
———	Dublin	0.766

		Sp. Gr.
Alcohol	London	0·815
——	Edin.	0·796
——	Dublin	0·810
Aqua Destillata	L. E. D	1·000
—— Ammoniæ	Edin.	0·960
—— ——	Dublin	0·950
—— —— Acetatis	Edin.	1·011
—— —— ——	Dublin	1·011
—— Ammoniæ Carbonatis	Dublin	1·090
—— Barytæ Muriatis	Dublin	1·230
—— Calcis Muriatis	Dublin	1·202
—— Potassæ	Edin.	1·072
—— ——	Dublin	1·080
—— —— Carbonatis	Dublin	1·320
—— Potassii Sulphureti	Dublin	1·117
—— Sodæ Carbonatis	Dublin	1·024
Liquor Ammoniæ	London	0·960
—— —— Fortior	London	0·882
—— Plumbi Diacetatis	London	1·260
—— Potassæ	London	1·063
—— —— Carbonatis	London	1·473
Oleum Æthereum	London	1·05
Spiritus Æthereus Nitrosus	Dublin	0·850
—— Ætheris Nitrici	London	0·834
—— —— ——	Edin.	0·847
—— —— Sulphurici	Edin.	0·809
—— Ammoniæ	London	0·860
—— —— Aromaticus	London	0·914
—— —— Fœtidus	London	0·861
—— Rectificatus	London	0·838
—— ——	Edin.	0·838
—— ——	Dublin	0·840
—— Tenuior	London	0·920
—— ——	Edin.	0·912
—— ——	Dublin	0·919
Tinctura Ferri Sesquichloridi	London	0·992

RELATION BETWEEN DIFFERENT THERMOMETRICAL SCALES.

The thermometer always used in this country is that of Fahrenheit; it is also used in parts of Germany.

In this instrument the range between the freezing and boiling points of water is divided into 180°, and as the greatest possible degree of cold was supposed to be that produced by mixing snow and salt together, it was made the zero. Hence the freezing point became 32°, and the boiling point 212°.

The Centigrade thermometer places the zero at the freezing point of water, and divides the range between the freezing and boiling points into 100°. This scale has long been used in Sweden, under the title of Celsius's thermometer, and is generally adopted on the continent.

Reaumur's thermometer, which was formerly used in France, divides the space between the freezing and boiling points of water, into 80°, and places the zero at the freezing point. It is now little employed.

De Lisle's thermometer is used in Russia. The graduation begins at the boiling point and increases towards the freezing point. The boiling point is marked 0°, and the freezing point 150°.

To reduce Centigrade degrees to those of Fahrenheit.

Rule.—Multiply by 9, divide by 5, and add 32.

$$\text{Thus, } \overset{\text{Cent.}}{40} \times 9 \div 5 + 32 = \overset{\text{Fahr.}}{104}.$$

To reduce Fahrenheit's degrees to those of Centigrade.

Rule.—Subtract 32, multiply by 5, and divide by 9.

$$\text{Thus, } \overset{\text{Fahr.}}{104} - 32 \times 5 \div 9 = \overset{\text{Cent.}}{40}.$$

To reduce Reaumur's degrees to those of Fahrenheit.

Rule.—Multiply by 9, divide by 4, and add 32.

$$\text{Thus, } \overset{\text{Reaumur.}}{32} \times 9 \div 4 + 32 = \overset{\text{Fahr.}}{104}.$$

To reduce Fahrenheit's degrees to those of Reaumur.

Rule.—Subtract 32, multiply by 4, and divide by 9.

Fahr. Reaum.
Thus, 104 — 32 × 4 ÷ 9 = 32.

To reduce Reaumur's degrees to those of Centigrade.

Rule—Multiply by 5, and divide by 4.

Reaum. Cent.
Thus, 32 × 5 ÷ 4 = 40.

To reduce Centigrade degrees to those of Reaumur.

Rule.—Multiply by 4, and divide by 5.

Cent. Reaum.
Thus, 40 × 4 ÷ 5 = 32.

The following table of thermometrical equivalents has been calculated according to these rules.

Fahrenheit.	Reaumur.	Centigrade.	Fahrenheit.	Reaumur.	Centigrade.
2570	1128	1410	959	412	515
2480	1088	1360	950	408	510
2390	1048	1310	941	404	505
2300	1008	1260	932	400	500
2210	968	1210	923	396	495
2120	928	1160	914	392	490
2030	888	1110	905	388	485
1940	848	1060	896	384	480
1850	808	1010	887	380	475
1760	768	960	878	376	470
1670	728	910	869	372	465
1580	688	860	860	368	460
1490	648	810	851	364	455
1400	608	760	842	360	450
1310	568	710	833	356	445
1220	528	660	824	352	440
1130	488	610	815	348	435
1040	448	560	806	344	430
1004	432	540	797	340	425
995	428	535	788	336	420
986	424	530	779	332	415
977	420	525	770	328	410
968	416	520	761	324	405

Fahrenheit.	Reaumur.	Centigrade.	Fahrenheit.	Reaumur.	Centigrade.
752	320	400	584	245·33	306·66
743	316	395	583·25	245	306·25
734	312	390	583	244·88	306·11
725	308	385	582·8	244·8	306
716	304	380	582	244·44	305·55
707	300	375	581	244	305
698	296	370	580	243·55	304·44
689	292	365	579·2	243·2	304
680	288	360	579	243·11	303·88
671	284	355	578·75	243	303·75
662	280	350	578	242·66	303·33
653	276	345	577·4	242·4	303
644	272	340	577	242·22	302·77
635	268	335	576·5	242	302·5
626	264	330	576	241·77	302·22
617	260	325	575·6	241·6	302
608	256	320	575	241·33	301·66
600	252·44	315·55	574·25	241	301·25
599	252	315	574	240·88	301·11
598	251·55	314·44	573·8	240·8	301
597·2	251·2	314	573	240·44	300·55
597	251·11	313·88	572	240	300
596·75	251	313·75	571	239·55	299·44
596	250·36	313·33	570·2	239·2	299
595·4	250·4	313	570	239·11	298·88
595	250·22	312·77	569·75	239	298·75
594·5	250	312·5	569	238·66	298·33
594	249·77	312·22	568·4	238·4	298
593·6	249·6	312	568	238·22	297·77
593	249·33	311·66	567·5	238	297·5
592.25	249	311·25	567	237·77	297·22
592	248·88	311·11	566·6	237·6	297
591 8	248·8	311	566	237·33	296·66
591	248·44	310·55	565·25	237	296·25
590	248	310	565	236·88	296·11
589	247·55	309·44	564·8	236·8	296
588·2	247·2	309	564	236·44	295·55
588	247·11	308·88	563	236	295
587·75	247	308·75	562	235·55	294·44
587	246·66	308·33	561·2	235·2	294
586·4	246·4	308	561	235·11	293·88
586	246·22	307·77	560·75	235	293·75
585·5	246	307·5	560	234·66	293·33
585	245·77	307·22	559·4	234·4	293
584·6	245·6	307	559	234·22	292·77

Fahrenheit.	Reaumur.	Centigrade.	Fahrenheit.	Reaumur.	Centigrade
558·5	234	292·5	533	222·66	278·33
558	233·77	292·22	532·4	222·4	278
557·6	233·6	292	532	222·22	277·77
557	233·33	291·66	531·5	222	277·5
556·25	233	291·25	531	221·77	277·22
556	232·88	291·11	530·6	221·6	277
555·8	232 8	291	530	221·33	276·66
555	232·44	290·55	529·25	221	276·25
554	232	290	529	220·88	276·11
553	231·55	289·44	528·8	220·8	276
552·2	231·2	289	528	220·44	275·55
552	231·11	288·88	527	220	275
551·75	231	288·75	526	219·55	274·44
551	230·66	288·33	525·2	219·2	274
550·4	230·4	288	525	219·11	273·88
550	230·22	287·77	524·75	219	273·75
549·5	230	287·5	524	218·66	273·33
549	229·77	287·22	523·4	218·4	273
548·6	229·6	287	523	218·22	272·77
548	229·33	286·66	522·5	218	272·5
547·25	229	286·25	522	217·77	272·22
547	228·88	286·11	521·6	217·6	272
546·8	228·8	286	521	217·33	271·66
546	228·44	285·55	520·25	217	271·25
545	228	285	520	216·88	271·11
544	227·55	284·44	519·8	216·8	271
543·2	227·2	284	519	216·44	270·55
543	227·11	283·88	518	216	270
542·75	227	283·75	517	215·55	269·44
542	226·66	283·33	516·2	215·2	269
541·4	226·4	283	516	215·11	268·88
541	226·22	282·77	515·75	215	268·75
540·5	226	282·5	515	214·66	268·33
540	225·77	282·22	514·4	214·4	268
539·6	225·6	282	514	214·22	267·77
539	225·33	281·66	513·5	214	267·5
538·25	225	281·25	513	213·77	267·22
538	224·88	281 11	512·6	213·6	267
537·8	224·8	281	512	213·33	266·66
537	224·44	280·55	511·25	213	266·25
536	224	280	511	212·88	266·11
535	223·55	279·44	510·8	212·8	266
534·2	223·2	279	510	212·44	265·55
534	223·11	278·88	509	212	265
533·75	223	278·75	508	211·5	264·44

Fahrenheit.	Reaumur.	Centigrade.	Fahrenheit.	Reaumur.	Centigrade.
507·2	211·2	264	483	200·44	250·55
507	211·11	263·88	482	200	250
506·75	211	263·73	481	199·55	249·44
506	210·66	263·33	480·2	199·2	249
505·4	210·4	263	480	199·11	248·88
505	210·22	262·77	479·75	199	248·75
504·5	210	262·5	479	198·66	248·33
504	209·77	262·22	478·4	198·4	248
503·6	209·6	262	478	198·22	247·77
503	209·33	261·66	477·5	198	247·5
502·25	209	261·25	477	197·77	247·22
502	208·88	261·11	476·6	197·6	247
501·8	208·8	261	476	197·33	246·66
501	208·44	260·55	475·25	197	246·25
500	208	260	475	196·88	246·11
499	207·55	259·44	474.8	196·8	246
498·2	207·2	259	474	196·44	245·55
498	207·11	258·88	473	196	245
497·75	207	258·75	472	195·55	244·44
497	206·66	258·33	471·2	195·2	244
496·4	206·4	258	471	195·11	243·88
496	206·22	257·77	470·75	195	243·75
495·5	206	257·5	470	194·66	243·33
495	205·77	257·22	469·4	194·4	243
494·6	205·66	257	469	194·22	242·77
494	205·33	256·66	468·5	194	242·5
493·25	205	256·25	468	193·77	242·22
493	204·88	256·11	467·6	193·6	242
492·8	204·8	256	467	193·33	241·66
492	204·44	255·55	466·25	193	241·25
491	204	255	466	192·88	241·11
490	203·55	254·44	465·8	192·8	241
489·2	203·2	254	465	192·44	240·55
489	203·11	253·88	464	192	240
488·75	203	253:75	463	191·55	239·44
488	202·66	253·33	462·2	191·2	239
487·4	202·4	253	462	191·11	238·88
487	202·22	252·77	461·75	191	238·75
486·5	202	252·5	461	190·66	238·33
486	201·77	252·22	460·4	190·4	238
485·6	201·6	252	460	190·22	237·77
485	201·33	251·66	459·5	190	237·5
484·25	201	251·25	459	189.77	237·22
484	200·88	251·11	458·6	189·6	237
483·8	200·8	251	458	189·33	236·66

Fahrenheit.	Reaumur.	Centigrade.	Fahrenheit.	Reaumur.	Centigrade.
457·25	189	236·25	432	177·77	222·22
457	188 88	236·11	431·6	177·6	222
456·8	188·8	236	431	177·33	221·66
456	188·44	235·55	430·25	177	221·25
455	188	235	430	176·88	221·11
454	187·55	234·44	429·8	176·8	221
453·2	187 2	234	429	176·44	220·55
453	187·11	233·88	428	176	220
452·75	187	233·77	427	175·55	219·44
452	186·66	233·33	426·2	175·2	219
451·4	186·4	233	426	175·11	218·88
451	186·22	232·77	425·75	175	218·75
450·5	186	232·5	425	174·66	218·33
450	185·77	232:22	424·4	174·4	218
449·6	185·6	232	424	174·22	217·77
449	185·33	231·66	423·5	174	217·5
448·25	185	231·25	423	173·77	217·22
448	184·88	231·11	422·6	173·6	217
447·8	184·8	231	422	173·33	216·66
447	184·44	230·55	421·25	173	216·25
446	184	230	421	172·88	216·11
445	183·55	229·44	420·8	172·8	216
444·2	183·2	229	420	172·44	215·55
444	183·11	228·88	419	172	215
443·75	183	228·75	418	171·55	214·44
443	182·66	228·33	417·2	171·2	214
442·4	182·4	228	417	171·11	213·88
442	182·22	227·77	416·75	171	213·75
441·5	182	227·5	416	170·36	213·33
441	181·77	227·22	415·4	170·4	213
440·6	181·6	227	415	170·22	212·77
440	181·33	226·66	414·5	170	212·5
439·25	181	226·25	414	169·77	212·22
439	180·88	226·11	413·6	169·6	212
438·8	180·8	226	413	169·33	211·66
438	180·44	225·55	412·25	169	211·25
437	180	225	412	168·88	211·11
436	179·55	224·44	411·8	168·8	211
435·2	179·2	224	411	168·44	210·5
435	179·11	223·88	410	168	210
434·75	179	223·75	409	167·55	209·44
434	178·66	223·33	408:2	167·2	209
433·4	178·4	223	408	167·11	208·88
433	178·22	222·77	407·75	167	208·75
432·5	178	222·5	407	166·66	208·33

Fahrenheit.	Reaumur.	Centigrade.	Fahrenheit.	Reaumur.	Centigrade.
406·4	166·4	208	381	155·11	193·88
406	166·22	207·77	380·75	155	193·75
405·5	166	207·5	380	154·66	193·33
405	165·77	207·22	379·4	154·4	193
404·6	165·6	207	379	154·22	192·77
404	165·33	206·66	378·5	154	192·5
403·25	165	206·25	378	153·77	192·22
403	164·88	206·11	377·6	153·6	192
402·8	164·8	206	377	153·33	191·66
402	164·44	205·55	376·25	153	191·25
401	164	205	376	152·88	191·11
400	163·55	204·44	375·8	152·8	191
399·2	163·2	204	375	152·44	190·55
399	163·11	203·88	374	152	190
398·75	163	203·75	373	151·55	189·44
398	162·66	203·33	372·2	151·2	189
397·4	162·4	203	372	151·11	188·88
397	162·22	202·77	371·75	151	188·75
396·5	162	202·5	371	150·66	188·33
396	161·77	202·22	370·4	150·4	188
395·6	161·6	202	370	150·22	187·77
395	161·33	201·66	369·5	150	187·5
394·25	161	201·25	369	149·77	187·22
394	160·88	201·11	368·6	149·6	187
393·8	160·8	201	368	149·33	186·66
393	160·44	200·55	367·25	149	186·25
392	160	200	367	148·88	186·11
391	159·55	199·44	366·8	148·8	186
390·2	159·2	199	366	148:44	185·55
390	159·11	198·88	365	148	185
389·75	159	198·75	364	147·55	184·44
389	158·66	198·33	363·2	147 2	184
388·4	158·4	198	363	147·11	183·88
388	158·22	197·77	362·75	147	183·75
387·5	158	197·5	362	146·66	183·33
387	157·77	197·22	361·4	146·4	183
386·6	157·6	197	361	146·22	182·77
386	157·33	196·66	360·5	146	182·5
385·25	157	196·25	360	145·77	182·22
385	156·88	196·11	359·6	145·6	182
384·8	156·8	196	359	145·33	181·66
384	156·44	195·55	358·25	145	181·25
383	156	195	358	144·88	181·11
382	155·55	194·44	357.8	144·8	181
381·2	155·2	194	357	144·44	180·55

Fahrenheit.	Reaumur.	Centigrade.	Fahrenheit.	Reaumur.	Centigrade.
356	144	180	331	132·88	166·11
355	143·55	179·44	330·8	132·8	166
354·2	143·2	179	330	132·44	165·55
354	143·11	178·88	329	132	165
353·75	143	178·75	328	131·55	164·44
353	142·66	178·33	327·2	131·2	164
352·4	142·4	178	327	131·11	163·88
352	142·22	177·77	326·75	131	163·73
351·5	142	177·5	326	130·66	163·33
351	141·77	177·22	325·4	130·4	163
350·6	141·6	177	325	130·22	162·77
350	141·33	176·66	324·5	130	162·5
349·25	141	176·25	324	129·77	162·22
349	140·88	176·11	323·6	129·6	162
348·8	140·8	176	323	129·33	161·66
348	140·44	175·55	322·25	129	161·25
347	140	175	322	128·88	161·11
346	139·55	174·44	321·8	128·8	161
345·2	139·2	174	321	128·44	160·55
345	139·11	173·88	320	128	160
344·75	139	173·75	319	127·55	159·44
344	138·66	173·33	318·2	127·2	159
343·4	138·4	173	318	127·11	158·88
343	138·22	172·77	317·75	127	158·75
342·5	138	172·5	317	126·66	158·33
342	137·77	172·22	316·4	126·4	158
341·6	137·6	172	316	126·22	157·77
341	137·33	171·66	315·5	126	157·5
340·25	137	171·25	315	125·77	157·22
340	136·88	171·11	314·6	125·6	157
339·8	136·8	171	314	125·33	156·66
339	136·44	170·55	313·25	125	156·25
338	136	170	313	124·88	156·11
337	135·55	169·44	312·8	124·8	156
336·2	135·2	169	312	124·55	155·55
336	135·11	168·88	311	124	155
335·75	135	168·75	310	123·55	154·44
335	134·66	168·33	309·2	123·2	154
334·4	134·4	168	309	123·11	153·88
334	134·22	167·77	308·75	123	153·75
333·5	134	167·5	308	122·66	153·33
333	133·77	167·22	307·4	122·4	153
332·6	133·6	167	307	122·22	152·77
332	133·33	166·66	306·5	122	152·5
331·25	133	166·25	306	121·77	152·22

Fahrenheit.	Reaumur.	Centigrade.	Fahrenheit.	Reaumur.	Centigrade.
305·6	121·6	152	280	110·22	137 77
305	121·33	151·66	279·5	110	137·5
304·25	121	151·25	279	109·77	137·22
304	120·88	151·11	278·6	109·6	137
303·8	120·8	151	278	109·33	136·66
303	120·44	150·55	277·25	109	136·25
302	120	150	277	108·88	136·11
301	119·55	149·44	276·8	108·8	136
300·2	119·2	149	276	108·44	135·55
300	119·11	148·88	275	108	135
299·75	119	148·75	274	107·55	134·44
299	118·66	148·33	273·2	107·2	134
298·4	118·4	148	273	107·11	133·88
298	118·22	147·77	272·75	107	133·77
297·5	118	147·5	272	106·66	133·33
297	117·77	147·22	271·4	106·4	133
296 6	117·6	147	271	106·22	132·77
296	117·33	146·66	270·5	106	132·5
295·25	117	146·25	270	105·77	132·22
295	116·88	146·11	269·6	105·6	132
294·8	116·8	146	269	105·33	131·66
294	116·44	145·55	268·25	105	131·25
293	116	145	268	104·88	131·11
292	115·55	144·44	267·8	104·8	131
291·2	115·2	144	267	104·44	130·55
291	115·11	143·88	266	104	130
290·75	115	143·75	265	103·55	129·44
290	114·66	143·33	264·2	103·2	129
289·4	114·4	143	264	103·11	128·88
289	114·22	142·77	263·75	103	128·75
288·5	114	142·5	263	102·66	128·33
288	113·77	142·22	262·4	102·4	128
287·6	113·6	142	262	102·22	127·77
287	113·33	141·66	261·5	102	127·5
286·25	113	141·25	261	101·77	127·22
286	112·88	141·11	260·6	101·6	127
285·8	112·8	141	260	101·33	126·66
285	112·44	140·55	259·25	101	126·25
284	112	140	259	100·88	126·11
283	111·55	139·44	258·8	100·8	126
282·2	111·2	139	258	100·44	125·55
282	111·11	138·88	257	100	125
281·75	111	138·75	256	99·55	124·44
281	110·66	138·33	255·2	99·2	124
280·4	110·4	138	255	99·11	123·88

Fahrenheit.	Reaumur.	Centigrade.	Fahrenheit.	Reaumur.	Centigrade.
254·75	99	123·75	229	87·55	109·44
254	98.66	123·33	228·2	87·2	109
253·4	98·4	123	228	87·11	108·88
253	98·22	122·77	227·75	87	108·75
252·5	98	122·5	227	86·66	108·33
252	97·77	122·22	226·4	86·4	108
251·6	97·6	122	226	86·22	107·77
251	97·33	121·66	225·5	86	107·5
250·25	97	121·25	225	85·77	107·22
250	96·88	121·11	224·6	85·6	107
249·8	96·8	121	224	85·33	106·66
249	96·44	120·55	223·25	85	106·25
248	96	120	223	84·88	106·11
247	95·55	119·44	222·8	84·8	106
246·2	95·2	119	222	84·44	105·55
246	95·11	118·88	221	84	105
245·75	95	118·75	220	83·55	104·44
245	94·66	118·33	219·2	83·2	104
244·4	94·4	118	219	83·11	103·88
244	94·22	117·77	218·75	83	103·75
243·5	94	117·5	218	82·66	103·33
243	93·77	117·22	217·4	82·4	103
242·6	93·6	117	217	82·22	102·77
242	93·33	116·66	216·5	82	102·5
241·25	93	116·25	216	81·77	102·22
241	92·88	116·11	215·6	81·6	102
240·8	92·8	116	215	81·33	101·66
240	92·44	115·55	214·25	81	101·25
239	92	115	214	80·88	101·11
238	91·55	114·44	213·8	80·8	101
237·2	91·2	114	213	80·44	100·55
237	91·11	113·88	212	80	100
336·75	91	113·75	211	79·55	99·44
236	90·36	113·33	210·2	79·2	99
235·4	90·4	113	210	79·11	98·88
235	90·22	112·77	209·75	79	98.75
234·5	90	112·5	209	78·66	98.33
234	89·77	112·22	208·4	78·4	98·0
233·6	89·6	112	208	78·22	97·77
233	89·33	111·66	207·5	78	97.5
232·25	89	111·25	207	77·77	97·22
232	88·88	111·11	206·6	77·6	97
231·8	88·8	111	206	77·33	96·66
231	88·44	110.5	205·25	77	96·25
230	88	110	205	76·88	96·11

Fahrenheit.	Reaumur.	Centigrade.	Fahrenheit.	Reaumur.	Centigrade.
204·8	76·8	96	179	65·33	81·66
204	76·44	95·55	178·25	65	81·25
203	76	95	178	64·88	81·11
202	75·55	94·44	177·8	64·8	81
201·2	75·2	94	177	64·44	80·55
201	75·11	93·88	176	64	80
200·75	75	93·75	175	63·55	79·44
200	74·66	93·33	174·2	63·2	79
199·4	74·4	93	174	63·11	78·88
199	74·22	92·77	173·75	63	78·75
198·5	74	92.5	173	62·66	78·33
198	73·77	92·22	172·4	62·4	78
197·6	73·6	92	172	62·22	77·77
197	73·33	91·66	171·5	62	77·5
196·25	73	91·25	171	61·77	77·22
196	72·88	91·11	170·6	61·6	77
195·8	72·8	91	170	61·33	76·66
195	72·44	90·55	169·25	61	76·25
194	72	90	169	60·88	76·11
193	71·55	89·44	168·8	60·8	76
192·2	71·2	89	168	60·44	75·55
192	71·11	88·88	167	60	75
191·75	71	88·75	166	59·55	74·44
191	70·66	88·33	165·2	59·2	74
190·4	70·4	88	165	59·11	73·88
190	70·22	87·77	164·75	59	73·75
189·5	70	87·5	164	58·66	73·33
189	69·77	87·22	163·4	58·4	73
188·6	69·6	87	163	58·22	72·77
188	69·33	86·66	162·5	58	72·5
187·25	69	86·25	162	57·77	72·22
187	68·88	86·11	161·6	57·6	72
186·8	68·8	86	161	57·33	71·66
186	68·44	85·55	160·25	57	71·25
185	68	85	160	56·88	71·11
184	67·55	84·44	159·8	56·8	71
183·2	67·2	84	159	56·44	70 55
183	67·11	83·88	158	56	70
182·75	67	83·75	157	55·55	69·44
182	66·66	83·33	156·2	55·2	69
181·4	66·4	83	156	55·11	68·88
181	66·22	82·77	155·75	55	68 75
180·5	66	82·5	155	54·66	68·33
180	65·77	82·22	154·4	54·4	68
179·6	65·6	82	154	54·22	67·77

Fahrenheit.	Reaumur.	Centigrade.	Fahrenheit.	Reaumur.	Centigrade.
153·5	54	67·5	128	42·66	53·33
153	53·77	67·22	127·4	42·4	53
152·6	53·6	67	127	42·22	52·77
152	53·33	66·66	126·5	42	52·5
151·25	53	66·25	126	41·77	52·22
151	52·88	66·11	125·6	41·6	52
150·8	52·8	66	125	41·33	51·66
150	52·44	65·55	124·25	41	51·25
149	52	65	124	40·88	51·11
148	51·55	64·44	123·8	40·8	51
147·2	51·2	64	123	40·44	50·55
147	51·11	63·88	122	40	50
146·75	51	63·75	121	39·55	49·44
146	50·66	63·33	120·2	39·2	49
145·4	50·4	63	120	39·11	48·88
145	50·22	62·77	119·75	39	48·75
144·5	50	62·5	119	38·66	48·33
144	49·77	62·22	118·4	38·4	48
143·6	49·6	62	118	38·22	47·77
143	49·33	61·66	117·5	38	47·5
142·25	49	61·25	117	37·77	47·22
142	48·88	61·11	116·6	37·6	47
141·8	48·8	61	116	37·33	46·66
141	48·44	60·55	115·25	37	46·25
140	48	60	115	36·88	46·11
139	47·55	59·44	114·8	36·8	46
138·2	47·2	59	114	36·44	45·55
138	47·11	58·88	113	36	45
137·75	47	58·75	112	35·55	44·44
137	46·66	58·33	111·2	35·2	44
136·4	46·4	58	111	35·11	43·88
136	46·22	57·77	110·75	35	43·75
135·5	46	57·5	110	34·66	43·33
135	45·77	57·22	109·4	34·4	43
134·6	45·6	57	109	34·22	42·77
134	45·33	56·66	108·5	34	42·5
133·25	45	56·25	108	33·77	42·22
133	44·88	56·11	107·6	33·6	42
132·8	44·8	56	107	33·33	41·66
132	44·55	55·55	106·25	33	41·25
131	44	55	106	32·88	41·11
130	43·55	54·44	105·8	32·8	41
129·2	43·2	54	105	32·44	40·55
129	43·11	53·88	104	32	40
128·75	43	53·75	103	31·55	39·44

Fahrenheit.	Reaumur.	Centigrade.	Fahrenheit.	Reaumur.	Centigrade.
102·2	31·2	39	78	20·44	25·55
102	31·11	38·88	77	20	25
101·75	31	38·75	76	19·55	24·44
101	30·66	38·33	75·2	19·2	24
100·4	30·4	38	75	19·11	23·88
100	30·22	37·77	74·75	19	23·75
99·5	30	37·5	74	18·66	23·33
99	29·77	37·22	73·4	18·4	23
98·6	29·6	37	73	18·22	22·77
98	29·33	36·66	72·5	18	22·5
97·25	29	36·25	72	17·77	22·22
97	28·88	36·11	71·6	17·6	22
96·8	28·8	36	71	17·33	21·66
96	28·44	35·55	70·25	17	21·25
95	28	35	70	16·88	21·11
94	27·55	34·44	69·8	16·8	21
93·2	27·2	34	69	16·44	20·55
93	27·11	33·88	68	16	20
92·75	27	33·77	67	15·55	19·44
92	26·66	33·33	66·2	15·2	19
91·4	26·4	33	66	15·11	18·88
91	26·22	32·77	65·75	15	18·75
90·5	26	32·5	65	14·66	18·33
90	25·77	32·22	64·4	14·4	18
89·6	25·6	32	64	14·22	17·77
89	25·33	31·66	63·5	14	17·5
88·25	25	31·25	63	13·77	17·22
88	24·88	31·11	62·6	13·6	17
87·8	24·8	31	62	13·33	16·66
87	24·44	30·55	61·25	13	16·25
86	24	30	61	12·88	16·11
85	23·55	29·44	60·8	12·8	16
84·2	23·2	29	60	12·44	15·55
84	23·11	28·88	59	12	15
83·75	23	28·75	58	11·55	14·44
83	22·66	28·33	57·2	11·2	14
82·4	22·4	28	57	11·11	13·88
82	22·22	27·77	56·75	11	13·75
81·5	22	27·5	56	10·66	13·33
81	21·77	27·22	55·4	10·4	13
80·6	21·6	27	55	10·22	12·77
80	21·33	26·66	54·5	10	12·5
79·25	21	26·25	54	9·77	12·22
79	20·88	26·11	53·6	9·6	12
78·8	20·8	26	53	9·33	11·66

Fahrenheit.	Reaumur.	Centigrade.	Fahrenheit.	Reaumur.	Centigrade.
52·25	9	11·25	27	— 2·22	— 2·77
52	8·88	11·11	26·6	— 2·4	— 3
51·8	8·8	11	26	— 2·66	— 3·33
51	8·44	10·5	25·25	— 3	— 3·75
50	8	10	25	— 3·11	— 3·88
49	7·55	9·44	24·8	— 3·2	— 4
48·2	7·2	9	24	— 3·55	— 4·44
48	7·11	8·88	23	— 4	— 5
47·75	7	8·75	22	— 4·44	— 5·55
47	6·66	8·33	21·2	— 4·8	— 6
46·4	6·4	8	21	— 4·88	— 6·11
46	6·22	7·77	20·75	— 5	— 6·25
45·5	6	7·5	20	— 5·33	— 6·66
45	5·77	7·22	19·4	— 5·6	— 7
44·6	5·6	7	19	— 5·77	— 7·22
44	5·33	6·66	18·5	— 6	— 7·5
43·25	5	6·25	18	— 6·22	— 7·77
43	4·88	6·11	17·6	— 6·4	— 8
42·8	4·8	6	17	— 6·66	— 8·33
42	4·44	5·55	16·25	— 7	— 8·75
41	4	5	16	— 7·11	— 8·88
40	3·55	4·44	15·8	— 7·2	— 9
39·2	3·2	4	15	— 7·55	— 9·44
39	3·11	3·88	14	— 8	—10
38·75	3	3·75	13	— 8·44	—10·55
38	2·66	3·33	12·2	— 8·8	—11
37·4	2·4	3	12	— 8·88	—11·11
37	2·22	2·77	11·75	— 9	—11·25
36·5	2	2·5	11	— 9·33	—11·66
36	1·77	2·22	10·4	— 9·6	—12
35·6	1·6	2	10	— 9·77	—12·22
35	1·33	1·66	9·5	—10	—12·5
34·25	1	1·25	9	—10·22	—12·77
34	0·88	1·11	8·6	—10·4	—13
33·8	0·8	1	8	—10·66	—13·33
33	0·44	0·55	7·25	—11	—13·75
32	0	0	7	—11·11	—13·88
31	—0·44	—0·55	6·8	—11·2	—14
30·2	—0·8	—1	6	—11·55	—14·44
30	—0·88	—1·11	5	—12	—15
29·75	—1	—1·25	4	—12·44	—15·55
29	—1·33	—1·66	3·2	—12·8	—16
28·4	—1·6	—2	3	—12·88	—16·11
28	—1·77	—2·22	2·75	—13	—16·25
27·5	—2	—2·5	2	—13·33	—16·66

Fahrenheit.	Reaumur.	Centigrade.
1·4	-13·6	-17
1	-13·77	-17·22
0·5	-14	-17·5
0	-14·22	-17·77
- 0·4	-14·4	-18
- 1	-14·66	-18·33
- 1·75	-15	-18·75
- 2	-15·11	-18·88
- 2·2	-15·2	-19
- 3	-15·55	-19·44
- 4	-16	-20
- 5	-16·44	-20·55
- 5·8	-16·8	-21
- 6	-16·88	-21·11
- 6·25	-17	-21·25
- 7	-17·33	-21·66
- 7·6	-17·6	-22
- 8	-17·77	-22·22
- 8·5	-18	-22·5
- 9	-18·22	-22·77
- 9·4	-18·4	-23
-10	-18·66	-23·33
-10·75	-19	-23·75
-11	-19·11	-23·88
-11·2	-19·2	-24
-12	-19·55	-24·44
-13	-20	-25
-14	-20·44	-25·55
-14·8	-20·8	-26
-15	-20·88	-26·11
-15·25	-21	-26·25
-16	-21·33	-26·66
-16·6	-21·6	-27
-17	-21·77	-27·22
-17·5	-22	-27·5
-18	-22·22	-27·77
-18·4	-22·4	-28
-19	-22·66	-28·33
-19·75	-23	-28·75
-20	-23·11	-28·88
-20·2	-23·2	-29
-21	-23·55	-29·44
-22	-24	-30
-23	-24·44	-30·55
-23·8	-24·8	-31
-24	-24·88	-31·11
-24·25	-25	-31·25
-25	-25·33	-31·66
-25·6	-25·6	-32
-26	-25·77	-32·22
-26·5	-26	-32·5
-27	-26·22	-32·77
-27·4	-26·4	-33
-28	-26·66	-33·33
-28·75	-27	-33·75
-29	-27·11	-33·88
-29·2	-27·2	-34
-30	-27·55	-34·44
-31	-28	-35
-32	-28·44	-35·55
-32·8	-28·8	-36
-33	-28·88	-36·11
-33·25	-29	-36·25
-34	-29·33	-36·66
-34·6	-29·6	-37
-35	-29·77	-37·22
-35·5	-30	-37·5
-36	-30·22	-37·77
-36·4	-30·4	-38
-37	-30·66	-38·33
-37·75	-31	-38·75
-38	-31·11	-38·88
-38·2	-31·2	-39
-39	-31·55	-39·44
-40	-32	-40

FORMULÆ FOR COOLING OR FREEZING MIXTURES.

(MR. WALKER.)

FRIGORIFIC MIXTURES, WITHOUT ICE.

Mixtures.	Parts.	Thermometer sinks.	Degree of cold produced.
Muriate of Ammonia Nitrate of Potassa Water	5 5 16	From + 50° to + 10°	= 40
Muriate of Ammonia Nitrate of Potassa Sulphate of Soda Water	5 5 8 16	From + 50° to + 4°	= 46
Nitrate of Ammonia Water	1 1	From + 50° to + 4°	= 46
Nitrate of Ammonia Carbonate of Soda Water	1 1 1	From + 50° to − 7°	= 57
Sulphate of Soda Diluted Nitric Acid	3 2	From + 50° to − 30°	= 80
Sulphate of Soda Muriate of Ammonia Nitrate of Potassa Diluted Nitric Acid	6 4 2 4	From + 50° to − 10°	= 60
Sulphate of Soda Nitrate of Ammonia Diluted Nitric Acid	6 5 4	From + 50° to − 14°	= 64
Phosphate of Soda Diluted Nitric Acid	9 4	From + 50° to − 12°	= 62

Mixtures.	Parts.	Thermometer sinks.	Degree of cold produced.
Phosphate of Soda Nitrate of Ammonia Diluted Nitric Acid	9 6 4	From + 50° to − 21°	= 71
Sulphate of Soda Muriatic Acid	8 5	From + 50° to − 3°	= 53
Sulphate of Soda Diluted Sulphuric Acid		From + 50° to − 3°	= 53

FRIGORIFIC MIXTURES, WITH ICE.

Snow or pounded ice Salt	2 1	From any temperature to − 5°	
Snow or pounded ice Common Salt Muriate of Ammonia	 2 1	to − 12°	
Snow or pounded ice Common Salt Muriate of Ammonia Nitrate of Potassa	24 10 5 5	to − 18°	
Snow or pounded ice Common Salt Nitrate of Ammonia	12 5 5	to − 25°	
Snow Diluted Sulphuric Acid	3 2	From + 32° to − 23°	= 55
Snow Muriatic Acid	8 5	From + 32° to − 27°	= 59
Snow Diluted Nitric Acid	7 4	From + 32° to − 30°	= 62
Snow Chloride of Calcium	4 5	From + 32° to − 40°	= 72

Mixtures.	Parts.	Thermometer sinks.	Degree of cold produced.
Snow	2	From + 32° to − 50°	= 82
Cryst. Chloride of Calcium	3		
Snow	3	From + 32° to − 51°	= 83
Potassa	4		

COMBINATION OF FRIGORIFIC MIXTURES.

Phosphate of Soda	5	From 0° to − 34°	= 34
Nitrate of Ammonia	3		
Diluted Nitric Acid	4		
Phosphate of Soda	3	From − 34° to − 50°	= 16
Nitrate of Ammonia	2		
Diluted mixed Acids	4		
Snow	8	From − 10° to − 56°	= 46
Diluted Sulphuric or Nitric Acid	3		
Snow	3	From − 0° to − 46°	= 46
Diluted Nitric Acid	2		
Snow	1	From − 20° to − 60°	= 40
Diluted Sulphuric Acid	1		
Snow	3	From + 20° to − 48°	= 68
Chloride of Calcium	4		
Snow	3	From + 10° to − 54°	= 64
Chloride of Calcium	4		
Snow	2	From + 15° to − 68°	= 33
Chloride of Calcium	3		
Snow	1	From 0° to − 66°	= 66
Cryst. Chloride of Calcium	2		
Snow	1	From − 40° to − 73°	= 33
Cryst. Chloride of Calcium	3		
Snow	1	From − 68° to − 91°	= 23
Diluted Sulphuric Acid	10		

EFFECTS OF TEMPERATURE.

	Degrees below zero.
Greatest artificial cold produced by the evaporation of a mixture of solid carbonic acid and ether, *in vacuo*, by Faraday	160
Ditto, in the open air, by Thiloreir	135
Solid compound of alcohol and carbonic acid fuses	131
Greatest artificial cold produced by Walker	91
Strongest nitric acid freezes	55
Sulphuric ether congeals	47
Liquid ammonia freezes	46
Mercury freezes	39
Proof spirit and brandy freeze	7

	Degrees above zero.
Solution of 1 salt in 3 water, freezes	4
Solution of 1 salt in 4 water, freezes	7
Mixture of 1 alcohol 3 water, freezes	7
Solution of, salammoniac in 4 water	8
Oil of turpentine freezes	16
Strong wines freeze	20
Fluoric acid freezes	23
Oils of bergamot and cinnamon	23
Vinegar freezes	28
Milk freezes	30
Ice melts	32
Olive oil freezes	36
Glacial acetic acid solidifies	36
Medium temperature of the surface of the globe	50
Medium temperature of England	52
Oil of aniseed freezes	64
Lard melts	from 90 to 97
Heat of human blood	98
Phosphorus melts	99
Stearine from hogs' lard melts	109
Spermaceti melts	112
Tallow melts (Thomson)	92
———— (Nicholson)	127
Bees' wax melts	142
Ambergris melts (La Grange)	145
Potassium melts (Fownes)	150
———— (Daniell)	136

	Degrees above zero.
Bleached wax melts (Nicholson)	155
Sodium perfectly fluid	200
Iodine fuses (Gay Lussac)	210
———— (Fownes)	225
Sulphur fuses (Fownes)	226
Camphor fuses	303
Tin fuses	442
Bismuth fuses	476
Lead fuses	594
Zinc fuses	700
Antimony fuses	809
Red heat (Daniell)	980
Heat of common fire (Daniell)	1140
Brass fuses (Daniell)	1869
Silver fuses (Daniell)	2233
Iron fuses	3479

TEMPERATURES AT WHICH CERTAIN SOLIDS AND LIQUIDS ARE VOLATILIZED.

	Degrees above zero.
Liquid sulphurous acid boils (*anhydrous*)	14
Ether boils	98
Fuming sulphurous acid boils (*solution*)	113
Bisulphuret of carbon boils	126
Liquid ammonia boils	140
Pyroligneous spirit boils	150
Alcohol boils	176
———— (Black)	174
———— sp. gr. 0·800 (Henry)	172
Water boils	212
Phosphorus distils (Pelletier)	219
Water saturated with sea salt boils	225
Nitric acid boils (sp. gr. 1·5)	187
White oxide of arsenic sublimes	283
Oil of turpentine boils (Ure)	304
Petroleum boils (Ure)	316
Metallic arsenic sublimes	540
Phosphorus boils in close vessels	554
Sulphur boils	570
Sulphuric acid boils (Dalton)	590
———— (Black)	546
———— (Fownes)	620
Linseed oil boils	600
Mercury boils	662

BOILING POINTS OF SATURATED SOLUTIONS.

Alum	220°	Sulphate of Nickel	235°
Muriate of ammonia	236	Chlorate of potass	218
Oxalate of ammonia	218	Nitrate of potass	238
Tartrate of ammonia	230	Quadroxalate of potass	220
Chloride of barium	222	Acetate of soda	256
Nitrate of baryta	214	Nitrate of soda	246
Acetate of copper	214	Biborate of soda	222
Sulphate of copper	216	Carbonate of soda	220
Acetate of lead	212	Phosphate of soda	222
Chloride of calcium	220	Nitrate of strontia	224
Bichloride of mercury	214	Sulphite of zinc	220
Bicyanide of mercury	214	Boracic acid	218

TEMPERATURES TO BE OBSERVED IN CERTAIN PHARMACEUTICAL OPERATIONS.

In the fermentation of saccharine solutions the highest temperature should not exceed 86° (Thomson).

The lowest temperature at which they will ferment is 38° (Thomson).

The process of acetous fermentation is best conducted at a temperature of about 86°.

The temperature requisite to coagulate albumen varies with the state of dilution. If the quantity of albumen be so great that the liquid has a slimy aspect, a heat of 145° or 150° suffices, but in a very dilute condition boiling is required (Fownes).

In the London Pharmacopœia;

When a boiling heat is directed, a temperature is meant of 212° Fahr.

When a gentle heat is directed a temperature is meant of from 90° to 100°.

The specific gravities of substances ordered in the London Pharmacopœia are to be taken at a temperature of 62°.

A water bath is that by which any substance contained in a proper vessel is exposed either to hot water, or the vapour of boiling water. A sand bath is made of sand, to be gradually heated, in which anything is placed contained in a proper vessel.

Syrups are to be kept in a place where the temperature never exceeds 55°.

Vegetables, shortly after they have been gathered, those excepted which ought to be fresh, are to be lightly strewed, and dried as quickly as possible with a gentle heat (90° to 100°); keep them afterwards in proper vessels, excluded from the access of light and moisture.

In the Dublin Pharmacopœia ;

By the term superior heat is meant some degree between 200° and 212°.

When a medium heat is directed, a temperature is meant between 100° and 200°.

When an inferior heat is directed, a temperature is meant between 90° and 100°.

In the process of digestion, an inferior heat is to be applied, unless it should be otherwise directed ; in the process of maceration a heat should be applied between 60° and 90°.

In the Dublin and Edinburgh Pharmacopœias ;

Whenever mention occurs of the specific gravity of any body, its temperature is supposed to be at 60°.

CHEMICAL ELEMENTS, WITH THEIR SYMBOLS AND EQUIVALENTS.

	Symb.		Equiv.
Aluminium	Al.	Phillips	10
		Graham	13·72
Antimony (Stibium)	Sb.	Phillips	65
		Graham	129·24
Arsenic	As.	Phillips	38
		Graham	75.34
Barium	Ba.		68
Bismuth	Bi.		72
Boron	B.	Phillips	20
		Graham	10·91
Bromine	Br.		78
Cadmium	Cd.		56
Calcium	Ca.		20
Carbon	C.		6
Cerium	Ce.		48
Chlorine	Cl.		36
Chromium	Cr.		28
Cobalt	Co.		30
Columbium (Tantalum)	Ta.		185
Copper (Cuprum)	Cu.		32
Fluorine	F.		18
Glucinium	G.	Phillips	18
		Graham	26·54
Gold (Aurum)	Au.		200

	Symb.		Equiv.
Hydrogen	H.		1
Iodine	I.		126
Iridium	Ir.		98
Iron (Ferrum)	Fe.		28
Lantanium	La.		—
Lead (Plumbum)	Pb.		104
Lithium	L.		8
Magnesium	Mg		12
Manganese	Mn		28
Mercury (Hydrargyrum)	Hg.	Phillips	202
		Graham	101·43
Molybdenum	Mo		48
Nickel	Ni.		28
Nitrogen or Azote	N.		14
Osmium	Os.		100
Oxygen	O.		8
Palladium	Pd.		54
Phosphorus	P.	Phillips	16
		Graham	31·44
Platinum	Pl.		98
Potassium (Kalium)	K.		40
Rhodium	R.		52
Selenium	Se.		40
Silicium or Silicon	Si.	Phillips	8
		Graham	22·22
Silver (Argentum)	Ag.		108
Sodium (Natrium)	Na.		24
Strontium	Sr.		44
Sulphur	S.		16
Tellurium	Te.	Phillips	32
		Graham	64·25
Thorium	Th.		60
Tin (Stannum)	Sn.		58
Titanium	Ti.		24
Tungsten (Wolfram)	W.		100
Uranium	U.		217
Vanadium	V.		68
Yttrium	Y.		32
Zinc	Zn.		32
Zirconium	Zr.	Phillips	22
		Graham	33·67

THE SOLUBILITY OF SALTS.

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling point.	at 60°	at Boiling poi
ALUMINA.	3·9 to 3·97				
Acetate of	1·245	Undetermined			
Arseniate of	....	Insoluble			
Borate of	....	Uncrystallizable			
Camphorate of	....	0·05			
Lactate of	....	Uncrystallizable			
Muriate of	....	Very soluble		100 at 54½°	
Nitrate of	1·645	Very soluble			1
Oxalate of	....	Uncrystallizable			2·
Phosphate of	....	Insoluble			
Seleniate of	....	Insoluble			
Sulphate of.....................	....	50			
Sulphate of, and Potash	1·71	5·4	133·33		
Sulphate of, and Soda	1·6	100			
Sulphite of	....	Insoluble			
Tartrate of	....	Uncrystallizable		2·91	
Tartrate of, and Potash	....	Uncrystallizable			
Tungstate of	....	Insoluble			
Urate and Lithate of	....	Insoluble			
AMMONIA.					
Acetate of	....	Very soluble		Readily soluble	
Arseniate of	....	Soluble			
Binarseniate of	....	Soluble			
Arsenite of	....	Uncrystallizable			
Benzoate of.....................	....	Soluble			
Boletate of	....	38			
Borate of.....................	....	8½			0·4
Camphorate of	....	1	33		
Carbonate of (Sesqui)....	....	33 (*Ure*)			
....	....	20 (*Brande*)			
Chlorate of.....................	....	Very soluble			
Chromate of	....	Very soluble			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water at 60°	Solubility in 100 parts Water at Boiling point.	Solubility in 100 parts Alcohol at 60°	Solubility in 100 parts Alcohol at Boiling point.
AMMONIA.					
ate of	....	Difficultly crystallizable			
ocyanide of	....	Very soluble			
nate of	....	Soluble			
riodate of, (or Iodide 'Ammonium)	....	Very soluble			
rocyanate of	....	Soluble			
rosulphuret of	....	Very deliquescent			
ophosphite of	....	Soluble and deliquescent			
osulphite of	....	Very soluble			
te of	....	Sparingly soluble			
ate of	....	Uncrystallizable			
onate of	....	66			
ybdate of	....	Soluble			
iate of, (or Chloride Ammonium)	1·52	36	100	7·5 at 80° 4·75 do. 1·5 do.	7 Sp. gr. of Spirits. ·900 ·872 ·834
ate of	1·58	50	100		19·16
late of	1·582	4·5	40·84		
sphate of	1·8	25 (*Brande*)			
hosphate of	....	Less soluble			
sphite of	....	Very soluble			
purate of	....	·0066	much more		
olithate of	....	Soluble			
erate of	....	Very soluble			
cinate of	....	Very soluble			
phate of	....	50 (*Brande*)	100		
phite of	....	100 (*Ure*)			
trate of	....	60·03	304·7		2·91
ngstate of	....	Soluble			
ANTIMONY.	6.7				
etate of	....	Soluble (*Ure*)			
nzoate of	....	Soluble (*Ure*)			
trate of	....	Very soluble (*Brande*)			
assio-tartrate of	....	7	50		

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water at 60°	Solubility in 100 parts Water at Boiling point.	Solubility in 100 p Alcohol at 60°	Solubility in 100 p Alcohol at Boiling p
BISMUTH.	9·83				
Acetate of	....	Soluble			
Arseniate of	....	Insoluble			
Benzoate of	....	Soluble		Sparingly.	
Carbonate of	....	Insoluble			
Chloride of	....	Deliquescent			
Nitrate of	....	Decomposed			
Phosphate of	....	Soluble			
Sulphate of	....	Decomposed			
BARYTA.	4·	5 at 50°	10 at 212°		
Acetate of	1·828	88	96		
Antimoniate of	....	Insoluble			
Antimonite of	....	Slightly			
Arseniate of	....	Insoluble			
Arsenite of	....	Difficultly			
Benzoate of	....	Soluble			
Borate of	....	Very sparingly			
Camphorate of	....	Very sparingly			
Carbonate of	4.331	Very nearly insoluble			
Chlorate of	....	25			
Chromate of	....	Very sparingly			
Citrate of	....	Difficultly soluble			
Ferrocyanuret of	....	·0005	·01		
Hydriodate of, (or Iodide of Barium)	....	Very soluble			
Hydrosulphuret of	....	11	50		
Hypophosphite of	....	Very soluble			
Iodate of	....	·33	1·6		
Lactate of	....	Soluble			
Lithate of	....	Insoluble			
Muriate of, (or Chloride of Barium) (Anhydrous)	2·825	36·8	68·5	1 at 80° 0·29 .... 0·18 .... 0·09	Sp.gr. of Sprts. ·9 ·84 ·8 ·81

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water at 60°	Solubility in 100 parts Water at Boiling point.	Solubility in 100 parts Alcohol at 60°	Solubility in 100 parts Alcohol at Boiling point.
BARYTA.					
iate of. (or Chloride Barium) Cryst.	2·83	43 (*Brande*)	78	1·56 at 80°. 0·43 . . 0·32 . . 0·06 . . 0·25 . .	Sp. gr. of Sprts. ·900 ·848 ·834
te of	2·9	8·18 at 58·9° 35·18 at 214·97°			
late of	....	Nearly insoluble			
phate of	1·286	Insoluble			
phite of	....	0·25			
citrate of	....	·066	·02		
hate of	4·3	Insoluble			
hite of	1·694	Insoluble			
rate of		Slightly			
COBALT.	7.834				
ate of	....	Soluble			
moniate of	....	Soluble			
niate of	....	Insoluble			
te of	....	Scarcely			
onate of	....	Insoluble			
ate of	....	·026 (*Ure*)			
iate, or Chloride of	....	Very soluble			
ate of	....	Soluble		100 at 54½°	
late of	....	Insoluble			
hate of	....	4 (*Brande*)		Insoluble	
rate of	....	Soluble			
COPPER.	8·895				
ate of	1·78	(*Ure*)	20		
moniate of	....	Insoluble			
niate of	....	Insoluble			
zoate of	....	Slightly			
te of	....	Insoluble			
onate of	....	Insoluble			
rate of	....	Soluble			
mate of	....	Insoluble			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 Alcohol	
		at 60°	at Boiling point.	at 60°	at Boiling
COPPER.					
Citrate of	....	Insoluble			
Ferrocyanide of	....	Insoluble			
Fluoride of	....	Soluble			
Formate of	1·815	12			
Hyposulphite of	....	Soluble			
Muriate, or Chloride of	....	Soluble		100 at 176°	
Dichloride of	....	Nearly insoluble			
Nitrate of	2·174	Deliquescent			
Oxalate of	....	Soluble ?			
& Ammonia	....	Soluble ?			
& Potassa	....	Soluble ?			
& Soda	....	Insoluble			
Phosphate of	1·4158	Insoluble			
Subnitrate of	....	Insoluble			
Sulphate of	2·20	25	50		
Disulphate of	....	Insoluble			
Trisulphate of	....	Insoluble			
Sulphite of Protoxide	....	Insoluble			
Sulphate of & Potassa	....	Soluble			
& Ammonia	....	Soluble			
Ammonio Subsulphate	....	66·6			
Tartrate of	....	Soluble			
Bitartrate of	....	Less soluble			
Tartrate of & Potassa	....	Soluble			
GOLD.	19·361				
Perchloride of	....	Soluble			
Protochloride of	....	Soluble			
IRON.	7·788				
Acetate (Prot.)	1·368	Soluble			
Acetate (Per.)	....	Uncrystallizable			
Antimoniate of	....	Insoluble			
Arseniate of (Prot.)	3·	Insoluble			
Arseniate of (Per.)	....	Insoluble			
Benzoate of	....	Insoluble			
Borate of	....	Insoluble			
Citrate (Proto.)	....	Soluble			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling point.	at 60°	at Boiling point.
IRON.					
ite (Bi proto.)	....	Sparingly soluble			
te (Per)	....	Very soluble and uncrystallizable			
ocyanide (Prussian ue)	....	Insoluble			
ride of	....	Insoluble			
ite of Peroxide of	....	Insoluble			
osulphite of	....	Soluble			
ite of Protox. of	....	Scarcely			
bdate of Protox. of	....	Insoluble			
ochloride of	....	Soluble			
loride of	....	Very soluble		100 at 176°	
te of Protoxide of	....	Uncrystallizable			
te of Peroxide of	....	Very soluble			
ate of Protoxide of	....	Soluble			
ate of Peroxide of	....	Scarcely			
phate of	2·6	Insoluble			
phate of Peroxide of	....	Nearly insoluble			
rphosphate of	....	Nearly insoluble			
inate of Peroxide of	....	Insoluble			
hate of (Cryst.)	1·880	76·238 (*Brande*)	333·3		
hate of (dry)	2·64				
ulphate of	....	Uncrystallizable		Soluble	
osulphite of	....	Uncrystallizable			
lphate of & Potassa	....	Soluble			
& Ammonia	....	Soluble			
rate (Proto.) of	....	0·25 (*Dumas*)			
rate (Per.) of	....	Soluble			
rate of & Potassa	....	Uncrystallizable		Soluble	
LEAD.	11·35				
ate (Cryst.)	2·345	27 (*Bostock*)	29	12·5 (*Brande*)	
ate (Anhyd.)	2·57	....	....	Soluble	
etate of	....	Soluble			
moniate of	....	Insoluble			
niate of	....	Insoluble			
zoate of	....	Insoluble			
ite of	....	Insoluble			
onate of	6·4 to 6·75	Insoluble			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 p Alcohol	
		at 60°	at Boiling point.	at 60°	at Boiling
LEAD.					
Citrate of	....	Nearly insoluble			
Chlorate of	....	Soluble			
Chloride of	1·823	3·33 (*Brande*)	4·5		
Chloride of (fused)	5·13				
Chromate of	6	Insoluble			
Ferrocyanuret of	....	Insoluble			
Gallate of	....	Insoluble			
Iodide of	....	0·08	0·5		
Hyposulphite of	....	Soluble			
Lactate of	....	Soluble (*Ure*)			
Superlactate of	....	Soluble			
Malate of	....	Scarcely			
Molybdate of	....	Insoluble			
Nitrate of	4·	13			
Dinitrate of	....	Scarcely at 60°, but much more so at 212°			
Oxalate of	....	Insoluble			
Phosphate of	....	Insoluble			
Phosphite of	....	Insoluble			
Succinate of	....	Insoluble			
Sulphate of	....	Not absolutely insolub.			
Sulphite of	....	Insoluble			
Tannate of	....	Insoluble			
Tartrate of	....	Almost insoluble			
& Potassa	....	Insoluble (*Berzelius*)			
LIME.	2·3908	*Kirwan*)			
Acetate of	1·005	Soluble		2·4 at 80° 4·12 .. 4·75 .. 4·88 ..	Sp. gr. of Sprts.
Antimoniate of		Insoluble			
Arseniate of		Insoluble			
Arsenite of		Difficultly soluble			
Benzoate of		Sparingly soluble			
Borate of		Very difficultly			
Carbonate of (Anhyd.)	2·7	Insoluble			
Chlorate of		Very soluble		Soluble	

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water at 60°	Solubility in 100 parts Water at Boiling point.	Solubility in 100 parts Alcohol at 60°	Solubility in 100 parts Alcohol at Boiling point.
LIME.					
mate of	....	Soluble			
te of	....	Nearly insoluble			
ide	3·15	Insoluble			
phosphite of	....	Solubility nearly equal at all temperatures			
sulphate of	....	40·65 (*Brande*)	150		
sulphite of	....	Very soluble			
e of	....	20	100		
e of Calcium	....	Deliquescent			
te of	....	·66	1·53		
bdate of	....	Insoluble			
ate, (or Chloride of lcium)	1·76	200 at 32° 400 at 60° almost any quantity at 220°			
te of	1·62	25			161·66
ate of	....	Insoluble			
phate of	....	Insoluble			
osphate of	....	Soluble			
hosphate of	3·	Almost insoluble			
inate of	....	Difficultly soluble			
hate of	....	0·301 at 50°			
hite of	....	12·5			
ate of	1·9009	Nearly insoluble at 60° but ·16 at 212°			
gstate of	....	Insoluble			
LITHIA.					
ate of	....	Deliquescent			
rbonate of	....	Slightly soluble			
ite of	....	Soluble			
onate of	....	1		Insoluble	
ride of Lithium	....	Very deliquescent			
omate of	....	Very soluble			
ite of	....	Very difficultly soluble			
ate of	....	Very deliquescent			
late of	....	Very deliquescent			
xalate of	....	Less soluble			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 pa Alcohol	
		at 60°	at Boiling point.	at 60°	at Boiling p
LITHIA.					
Phosphate of	....	Insoluble			
Sulphate of	....	Soluble			
Tartrate of	....	Easily soluble			
& Potassa....	....	Easily soluble			
& Soda	....	Easily soluble			
MAGNESIA.	2·3				
Acetate of	1·378	Very soluble			
Arseniate of	....	Deliquescent			
Arsenite of	....	Difficultly soluble			
Benzoate of	....	Soluble			
Borate of	2·566	Insoluble			
Carbonate of	....	Very slightly			
Chlorate of	....	Very soluble			
Chloride of Magnesium	1·6	200 (*Brande*)		50 50 at 80° (S. gr. of Spts) 21·25	
Chromate of	....	Very soluble			
Citrate of	....	Difficultly soluble			
Iodide of Magnesium....	....	Soluble			
Malate of	....	3·56 (*Brande*)			
Molybdate of	....	6·66	8·35		
Nitrate of	1·736	100		Nearly insolub pure alcohol 11 sp. gr.	
Oxalate of	....	Nearly insoluble			
Phosphate of	1·55	6·66			
& Ammonia	....	Sparingly soluble			
Succinate of	....	Uncrystallizable			
Sulphate of (dry)	....	33·192	73·57		
Sulphate of (cryst.)	1·76	68·042	150·71	1 at 80° (*Kirw*	
& Ammonia	1·696	Soluble			
& Potassa	....	Soluble			
& Soda	....	33·3			
Sulphite of.....................	1·38	5			
& Ammonia	....	Difficultly soluble			
Tartrate of	....	Insoluble			
Tungstate of	....	Soluble			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling point.	at 60°	at Boiling point.
MANGANESE.					
tate of	....	3		Soluble	
monio-chloride of	....	Soluble			
monio-sulphate of	....	Soluble			
imoniate of	....	Moderately soluble			
eniate of	....	Insoluble			
zoate of	....	Deliquescent (*Brande*)			
bonate of	....	Insoluble			
omate of	....	Soluble			
ate of	....	Very soluble		Soluble	
late of	....	Insoluble			
sphate of	....	Nearly insoluble			
cinate of	....	1 (*Ure*)			
phate of	2·877	31 (*Ure*) 50 (*Brande*)			
posulphate of	....	Deliquescent			
phite of	....	Insoluble			
gstate of	....	Insoluble			
MERCURY.	13·568				
etate of (Prot.)	....	0·16 (*Braconnot*)			
etate of (Per.)	....	Readily soluble			
seniate of	....	Insoluble			
nzoate of	....	Insoluble			
rate of	2·66	Insoluble			
hloride of	5·2 (*Hasen-fratz*) 6·5 (*Graham*)	6·25 (*Brande*)	33·3	42·6 10·74 at 50° Sprts. sp. gr. ·915 43·66 at 50° Sprts. sp. gr. ·818 (*Graham*)	85·2
loride of	7·176	·00833 at 212° (*Dumas*)			
romate of	....	Insoluble			
trate of	....	Insoluble			
cyanuret of	....		54		
oride of	....	Soluble			
olybdate of	....	Very sparingly			
trate (Prot.)	....	Soluble and decomposed by excess			
trate (Per.)	....	Do. do.			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water at 60°	at Boiling point.	Solubility in 100 par Alcohol at 60°	at Boiling
MERCURY.					
Oxalate of (Proto.)	4·98	Scarcely			
Oxalate of (Per.)	....	Insoluble			
Sulphate of (Proto.)	....	0·20	0·33		
Sulphate of (Per.)	....	Decomposed			
Sulphate of (Sub.)	6·444	·005	0·33		
Tartrate of		Insoluble			
& Potassa		Soluble			
NICKEL.	8·666				
Acetate of	....	Very soluble			
Arseniate of	....	Soluble (*Ure*)			
Carbonate of	....	Insoluble			
Chloride of	....	Soluble in hot water			
Nitrate of Protox.	....	50		Soluble	
& Ammonia	....	Soluble			
Oxalate of	....	Insoluble			
Phosphate of	....	Nearly insoluble			
Sulphate of	....	33·3	185·71		
& Ammonia	....	25			
& Potassa	....	11·1			
& Iron	....	Soluble			
Tartrate of	....	Very soluble			
PLATINUM.	23·000				
Protochloride of	....	Soluble		Easily solubl also in Ether	
Perchloride of	....	Soluble			
Protochloride of & Ammonium	....	Soluble		Insoluble	
& Potassium	....	Soluble		Insoluble	
& Sodium	....	Uncrystallizable		Very soluble	
Bichloride of & Ammonium	....	Very sparingly			
& Potassium	....	Very sparingly			
& Sodium	....	Soluble		Soluble	
& Barium	....	Soluble			
Protonitrate of	....	Soluble			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling point.	at 60°	at Boiling point.
PLATINUM.					
nitrate of	....	Soluble			
tosulphate of	....	Soluble			
sulphate of	....	Very soluble	....	Very soluble, also in Ether	
POTASSA.	1·706				
tate of	....	100	....	....	200
monio-oxalate of	....	Soluble			
monio-sulphate of	....	13			
monio-tartrate of	....	Very soluble			
imoniate of	....	Slightly			
imonite of................	....	Soluble			
eniate of	....	Uncrystallizable	....	3·75	
arseniate of	....	18·86 at 40°	....	Insoluble	
enite of	....	Uncrystallizable			
zoate of	....	Very soluble			
enzoate of................	....	10			
ate of	....	Soluble			
phorate of	....	1	25		
bonate of	2·6	100			
urbonate of	2·085	25	83		
orate of....................	....	6·03	60 at 188½°		
omate of	2·6	48	extremely	Insoluble	
hromate of	1·98	10	much more		
rate of	....	Very soluble			
umbate of................	....	Uncrystallizable			
rocyanide of	1·83	33·3	100		
ide of Potassium	....	143 at 65° (*G. Lussac*)		Sparingly	
ate of	....	7·14 (*Brande*)			
lybdate of................	....	Soluble			
oride of Potassium	1·98	29·21 at 66·83° 59·26 at 229·28°	....	2·083 4·62 at 80° Sp. gr. of Sprts. ·900 1·66 .... ·812 0·38 .... ·834	
rate of	2·073	29·31 at 64° 236·45 at 207° 285· at 238°	....		2·083
alate of	....	50 (*Ure*).................... 30 (*Brande*)		2·76 at 80° sp. gr. ·900 1 ...... of Sprts. ·872	

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water at 60°	Solubility in 100 parts Water at Boiling point.	Solubility in 100 part Alcohol at 60°	Solubility in 100 part Alcohol at Boiling poi
POTASSA.					
Binoxalate of................	....	(10 *Brande*)	(*Ure* 100)		
Quadroxalate of...........	....		66·66		2
Phosphate of	....	Difficultly soluble			
Diphosphate of	....	Soluble in hot water			
Biphosphate of	2·85	Very soluble			
Hypophosphite of	....	Very deliquescent........		Very soluble	
Hyposulphate of	....	Difficultly solub. at 60° readily at 212°			
Hyposulphite of	....	Deliquescent			
& Silver	....	Difficultly			
Succinate of	....	Very soluble			
Sulphate of	2·67	10·57 at 54° 26·33 at 214°			
Bisulphate of	....	50 at 40° 200 at 220°			
Sulphite of..................	1·586	100			
Tartrate of..................	1·556	100			0·4
Bitartrate of	1·95	1·05	6·66		2
Tartrovinate of	....	10	any quantity		
Tungstate of	....	Uncrystallizable			
Nitro-tungstate of	....		(*Ure*) 5		
SILVER.	10·474				
Acetate of	....	Very difficultly solub.			
Arseniate of	....	Insoluble			
Arsenite of....................	....	Insoluble			
Borate of	....	Difficultly soluble			
Chlorate of.....................		25 (*Chenevix*)			
Chromate of	....	Very slightly			
Citrate of	....	Insoluble			
Molybdate of................	....	Insoluble			
Chloride of (Fused)	5·45	Insoluble			
Nitrate of (Cryst.)........	3·521	100	200		
Oxalate of	....	Insoluble			
Phosphate of	7·3	Insoluble			
Succinate of	....	Soluble			
Sulphate of	....	1·15			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water at 60°	 at Boiling point.	Solubility in 100 parts Alcohol at 60°	 at Boiling point.
SILVER.					
phite of	....	Very little soluble			
posulphite of	....	Soluble			
& Potassa	....	Difficultly soluble			
trate of	....	Soluble			
& Potassa	....	Soluble			
SODA.					
etate of	2·1	35	150		
seniate of	1·76	10 (*Thomson*) 25 (*Ure*)			
arseniate of	....	Soluble			
& Potassa	....	Soluble			
nzoate of	....	Very soluble			
orate of	1·740	8·033	50		
bonate of	1·62	50	100		
arbonate of		7·6			
lorate of	....	33·3		Sol. in sp. rect.	
romate of	....	Very soluble		Sparingly	
rate of	....	100 or more (*Brande*)			
lide of Sodium	....	173			
late of	....	7·3		Insoluble	
lybdate of	....	Soluble			
uriate of (or Chloride of Sodium)	1·986	Equally soluble at all temperatures (*Berz.*)		5·8 at 80° sp. gr. of sprts. ·900 3·6 .... ·872 0·5 .... ·834	
trate of	2·	33·3 at 60° 100 at 123° *Dumas* 50 at 60° *Berzel.* 73 at 32° *Gay* 173 at 212° *Lussac* 80 at 32° 22·7 at 50° *Marx* 55 at 61° 218·5 at 246°		9·58 10·5 at 80° sp. gr. of sprts. ·900 6 ...... ·872 0·38 .... ·834	
alate of	....	Sparingly soluble			
osphate of	1·33	25	50		
& Ammonia	1·50	Soluble			
phosphate of	....	Very soluble			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 pa Alcohol	
		at 60°	at Boiling point.	at 60°	at Boiling p
SODA.					
Hypophosphite of	....	Very soluble		Very soluble	
Succinate of	....	Soluble			
Sulphate of (Cryst.)	1·44	48·28 at 64° 322·12 at 91°			
Sulphate of (dry)	....	16·73 at 64° 50·65 at 91° 42·65 at 217° (*Gay Lussac*)		Insoluble	
Hyposulphate of	....	41·6	91	Insoluble	
Bisulphate of	....	50			
Sulphate of & Ammonia	....	Soluble			
Sulphite of	2·95	25			
Hyposulphite of	....	Deliquescent		Insoluble	
Tartrate of	1·980	56·37 (*Thomson*)		Insoluble	
& Potassa	....	20			
Tartrovinate of	....	Soluble		Sol. in sp. re but sparingly absolute alcoh	
Tungstate of	....	25	50		
STRONTIA.	....	0·625 at 60° 5 at 212° (*Ure*)			
Hydrate of	....	2	50		
Acetate of	....	Very soluble			
Arseniate of	....	Sparingly soluble			
Arsenite of	....	Sparingly soluble			
Borate of	....	0·76			
Carbonate of	3·66	0·0651 at 212°			
Chlorate of	....	Very soluble		Soluble	
Chloride of Strontium	2·83	50		Soluble	
Chromate of	....	Insoluble (*Brande*)			
Citrate of	....	Soluble			
Ferrocyanuret of	....	25			
Iodide of Strontium	....	Soluble			
Iodate of	....	25			
Nitrate of	....		113		
Oxalate of	....		0·52		
Phosphate of	....	Insoluble			
Phosphite of	....	Soluble			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water at 60°	Solubility in 100 parts Water at Boiling point.	Solubility in 100 parts Alcohol at 60°	Solubility in 100 parts Alcohol at Boiling point.
STRONTIA.					
ophosphite of	....	Very soluble			
inate of	....	Soluble			
hate of	....	0·026 at 212°			
osulphite of...........	....	20 (*Gay Lussac*)		Insoluble	
osulphate of	....	22·22	66·66		
rate of....................	1·837	0·67 at 170°			
TIN.	7·3				
ate of	....	Soluble			
niate of	....	Insoluble			
ite of	....	Insoluble			
ate Proto. of	....	Uncrystallizable			
ate Per. of	....	Scarcely			
late of	....	Soluble			
sphate of	....	Insoluble			
cinate of	....	Soluble			
hate Proto. of.......	....	Crystallizable			
hate Per. of............	....	Uncrystallizable			
rate of....................	....	Soluble			
& Potassa	....	Very soluble			
ZINC.	6·861 to 7·2				
tate of	....	Very soluble			
imoniate of	....	Very sparingly			
ate of	....	Insoluble			
omate of	....	Sparingly			
ate of	....	Scarcely			
orate of....................	....	Very soluble			
oride of....................	1·577	Very soluble................		100 at 54½°	
de of	....	Soluble			
ite of	....	Difficultly soluble			
tate of	....	2 (*Ure*)			
ate of	2·0	Deliquescent			
ybdate of	....	Insoluble			
late of	....	Nearly insoluble			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling point.	at 60°	at Boiling poin
ZINC.					
Phosphate of	....	Uncrystallizable			
Succinate of	....	Soluble			
Sulphate of.....................	1·98	140 (*Dumas*)			
Sulphite of......................	....	81·81 at 220°		Insoluble	
Hyposulphite of............	....	Soluble........................		Soluble	
Sulphate of & Nickel....	....	33·33			
Tartrate of....................	....	Difficultly soluble			
Tartrovinate of	....	Soluble........................		Sparingly soluble	
Trisulphate of	....	Soluble			

SOLUBILITY OF ACIDS, BASES, &c.

ACID.					
Arsenious					
Vitreous	3·7385	1·78 (*Graham*)	9·68		
Opaque	3·699	2·9 (*Graham*)	11·47		
Benzoic	....	·50			
Boracic	....	3·9	33·3	20 at 176° (*Henry*	
Citric	1·0345	133·33	200	Soluble	
Gallic	....	5	33·33		
Oxalic (Cryst.)	....	11·5			
Succinic (Cryst.)	....	4	33·33	74 at 176°	
Tartaric	1·6	150 (*Brande*)	200	Soluble	
Brucia	....	·1177	0·2		
Cinchonia	....	Insoluble	0·04		
Morphia........................	....	Nearly insolub.	1		
Quinia	....	Nearly insolub.	0·5		
Strychnia	....	0·04 (*Graham*)	0·15		
Camphor	0·9887	0·229		75 at 176°	
Sugar Pur.....................	1·5 to 1·6	200		24½ at 176°	

EXPLANATION OF TERMS USED IN PRESCRIPTIONS.

A. aa., ana (Greek) of each. It signifies equally by weight or by measure.

Abdom., abdomen, the abdomen, the belly.

Abs., febr., absente febre, fever being absent.

Ad 2 vic., ad secundam vicem, to the second time; or *ad duas vices,* for two times.

Ad gr. acid., ad gratam aciditatem, to an agreeable acidity.

Ad def. animi, ad defectionem animi, to fainting.

Ad del. an., ad deliquium animi, to fainting.

Ad libit., ad libitum, at pleasure.

Add., adde, or *addantur,* add, or let them be added; *addendus,* to be added.

Adjac., adjacens, adjacent.

Admov., admove, admoveatur, admoveantur, apply, let it be applied, let them be applied.

Ads. febre, adstante febre, while the fever is present.

Alter. hor., alternis horis, every other hour.

Alvo adstr., alvo adstrictâ, when the bowels are confined.

Aq. astr., aqua astricta, frozen water.

Aq. bull., aqua bulliens, boiling water.

Aq. com., aqua communis, common water.

Aq. fluv., aqua fluviatilis, river water.

Aq. mar., aqua marina, sea water.

Aq. niv., aqua nivalis, snow water.

Aq. pluv., aqua pluviatilis, or *pluvialis,* rain water.

Aq. ferv., aqua fervens, hot water.

Aq. font., aqua fontana, or *aqua fontis,* spring water.

Bis ind., bis indies, twice a day.

Bib., bibe, drink.

BB., Bbds., Barbadensis, Barbadoes, as *aloë Barbadensis.*

BM. balneum mariæ, or *balneum maris,* a warm water bath.

But., butyrum, butter

B. V., balneum vaporis, a vapour bath.

Cœrul., cœruleus, blue.

Cap., capiat, let him (or her) take.

Calom., calomelas, calomel, protochloride of mercury.

C. C., cornu cervi, hartshorn; it may also signify *cucurbitula cruenta,* the cupping-glass with scarificator.

C. C. U., cornu cervi ustum, burnt hartshorn.

Cochleat., cochleatim, by spoonfuls.

Coch. ampl., cochleare amplum, a large (or table) spoonful; about half a fluid ounce.

Coch. infant., cochleare infantis, a child's spoonful.

Coch. magn., cochleare magnum, a large spoonful.

Coch. med., cochleare medium
Coch. mod., cochleare modicum a middling or moderate spoonful; that is, a dessert spoonful—about two fluid drachms.

Coch. parv., cochleare parvum, a small (or tea) spoonful; it contains about one fluid drachm.

Col., cola, strain.

Col., colatus, strained.

Colet., coletur, colat., coletur, let it be strained; *colaturæ,* to the strained liquor.

Colent., colentur, let them be strained.

Color., coloretur, let it be coloured.

Comp., compositus, compounded.

Cong., conguis, a gallon.

Cons., conserva, conserve; also (*imperat. of conservo*) keep.

Cont., rem., or *med., continuentur remedia,* or *medicamenta,* let the remedies, or the medicines, be continued.

Coq., coque, boil; *coquantur,* let them be boiled.

Coq. ad med. consumpt., coque or *coquatur ad medietatis consumptionem,* boil, or let it be boiled to the consumption of one-half.

Coq. S. A., coque secundum artem, boil according to art.

Coq. in S. A., coque in sufficiente quantitate aquæ, boil in a sufficient quantity of water.

Cort., cortex, bark.

C. v., cras vespere, to-morrow evening.

C. m. s., cras mane sumendus, to be taken to-morrow morning.

C. n., cras nocte, to-morrow night.

Crast., crastinus, for to-morrow.

Cuj., cujus, of which.

Cujusl., cujuslibet, of any.

Cyath. theæ, cyatho theæ, in a cup of tea.

Cyath., cyathus, vel
C. vinar., cyathus vinarius, a wine-glass; from an ounce and half to two ounces and half.

Deaur. pil., deaurentur pilulæ, let the pills be gilt.

Deb. spiss., debita spissitudo, due consistence.

Dec., decanta, pour off.

Decub. hor., decubitûs horâ, at the hour of going to bed, or at bed-time.

De d. in d., de die in diem, from day to day.

Deglut., deglutiatur, let it be swallowed.

Dej. alv., dejectiones alvi, stools.

Det., detur, let it be given.

Dieb. alt., *diebus alternis*, every other day.

Dieb. tert., *diebus tertiis*, every third day.

Dil. dilue., *dilutus*, dilute (thin), diluted.

Diluc., *diluculo*, at break of day.

Dim., *dimidius*, one-half.

D. in 2 plo., *detur in duplo*, let it be given in twice the quantity.

D. in p. æq., *dividatur in partes æquales*, let it be divided in equal parts.

D. P., *directione propria*, with a proper direction.

Donec alv. bis dej., *donec alvus bis dejecerit*, until the bowels have been twice opened.

Donec alv. sol. fuer., *donec alvus soluta fuerit*, until the bowels have been loosened.

Donec dol. neph. exulav., *donec dolor nephriticus exulaverit*, until the nephritic pain has been removed.

D., *dosis*, a dose.

Eburn., *eburneus*, made of ivory.

Ed., *edulcorata*, edulcorated.

Ejusd., *ejusdem*, of the same.

Elect., *electuarium*, an electuary.

Enem., *enema*, a clyster.

Exhib., *exhibeatur*, let it be administered.

Ext. sup. alut. moll., *extende super alutam mollem*, spread upon soft leather.

F., *fac*, make ; *fiat.*, *fiant*, let it be made, let them be made.

F. pil., *fiant pilulæ*, let pills be made.

Fasc., *fasciculus*, a bundle.

Feb. dur, *febre durante*, during the fever.

Fem. intern., *femoribus internis*, to the inside of the thighs.

F. venæs., *fiat venæsectio*, let venesection be performed.

F. H., *fiat haustus*, let a draught be made.

Fict., *fictilis*, earthen.

Fil., *filtrum*, a filtre.

Fist. arm., *fistula armata*, a clyster-pipe and bladder fitted for use.

Fl., *fluidus*, fluid.

F. L. A., *fiat lege artis*, let it be made by the rules of art.

F. M., *fiat mistura*, let a mixture be made.

F. S. A., *fiat secundum artem*, let it be made according to art.

Gel. quav., *gelatina quavis*, in any jelly.

G. G. G., *gummi guttæ gambæ*, gamboge.

Gr., *granum*, a grain ; *grana*, grains.

Gr. vi. pond., *grana sex pondere*, six grains by weight.

Gtt., *gutta*, a drop ; *guttæ*, drops.

Gtt. quibusd., *guttis quibusdam*, with some drops.

Guttat., *guttatim*, by drops.

Har. pil. sum. iij., harum pilularum sumantur tres, of these pills let three be taken.

H. D., or *hor. decub., horâ decubitûs,* at bed-time.

H. P., haustus purgans, purging draught.

H. S., horâ somni, at the hour of going to sleep.

Hor. un. spatio, horæ unius spatio, at the expiration of one hour.

Hor. interm., horis intermediis, in the intermediate hours.

Hor. 11*mâ. mat., horâ undecimâ matutinâ,* at 11 o'clock in the morning.

Ind., indies, daily.

In pulm., in pulmento, in gruel.

Inf., infunde, infuse.

Jul., julepus, julapium, a julep.

Inj. enem., injiciatur enema, let a clyster be thrown up.

Kal. ppt., kali præparatum, prepared kali (*potassæ carbonas* Ph. L.)

Lat. dol., lateri dolenti, to the affected side.

M., misce, mix; *mensurâ,* by measure; *manipulus,* a handful; *minimum,* a minim.

Mane pr., mane primo, early in the morning.

Man., manipulus, a handful.

Min., minimum, a minim, the 60th part of a drachm measure.

M. P., massa pilularum, a pill mass.

M. R , mistura, a mixture.

Mic. pan., mica panis, crumb of bread.

Mitt., mitte, send; *mittantur,* let them be sent.

Mitt. sang. ad ℥xij., mitte sanguinem ad ℥xij., take blood to twelve ounces.

Mod. præscr., modo præscripto, in the manner directed.

Mor. dict , more dicto, in the way ordered.

Mor. sol., more solito, in the usual way.

Ne tr. s. num., ne tradas sine nummo, do not deliver it without the money.

N. M., nux moschata, a nutmeg.

No., numero, in number.

O., octarius, a pint.

Ol. lini s. i., oleum lini sine igné, cold drawn linseed oil.

Omn. hor., omni horâ, every hour.

Omn. bid., omni biduo, every two days.

Omn. bih., omni bihorio, every two hours.

O. M., or *omn. man., omni mane,* every morning.

O. N., or *omn. noct., omni nocte,* every night.

Omn. quadr. hor., omni quadrante horæ, every quarter of an hour.

O. O. O., oleum olivæ optimum, best olive oil.

Ov., ovum, an egg.

Oz., the ounce avoirdupois, or common weight, as contradistinguished from that prescribed by physicians.

P. e., part. æqual., partes æquales, equal parts.

P. d., per deliquium, by deliquescence.

Past., pastillus, a pastil, or ball of paste.

P., pondere, by weight.

Ph. D., Pharmacopœia Dubliniensis.

Ph. E., Pharmacopœia Edinensis.

Ph. L., Pharmacopœia Londinensis.

Ph. U. S., Pharmacopœia of the United States.

Part. vic., partitis vicibus, in divided doses.

Per. op. emet., peractâ operatione emetici, the operation of the emetic being over.

Pocul., poculum, a cup.

Pocill., pocillum, a small cup.

Post sing. sed. liq., post singulas sedes liquidas, after every loose stool.

Ppt., præparata, prepared.

P. r. n., pro re nata, occasionally.

P. rat. ætat., pro ratione ætatis, according to the age.

Pug., pugillus, a pinch, a gripe between the thumb and the two first fingers.

Pulv., pulvis, pulverizatus, a powder, pulverised.

Q. l., quantum lubet
Q. p., quantum placet } as much as you please.

Q. s., quantum sufficiat, as much as may suffice.

Quor., quorum, of which.

Q. V., quantum vis, as much as you will.

Red. in pulv., redactus in pulverem, reduced to powder.

Redig. in pulv., redigatur in pulverem, let it be reduced into powder.

Reg. umbil., regio umbilici, the umbilical region.

Repet., repetatur, or *repetantur,* let it, or them, be repeated.

S. A., secundum artem, according to art.

Scat., scatula, a box.

S. N., secundum naturam, according to nature.

Semidr., semidrachma, half a drachm.

Semih., semihora, half an hour.

Sesunc., sesuncia, half an ounce.

Sesquih., sesquihora, an hour and a half.

Si n. val., si non valeat, if it does not answer.

Si op., sit, si opus sit, if it be necessary.

Si vir. perm., si vires permittant, if the strength allow it.

Signat., signatura, a label.

Sign. n. pr., signetur nomine proprio, let it be written upon, let it be signed with the proper name (not the trade name.)

Sing., singulorum, of each.

S. S. S., *stratum super stratum,* layer upon layer.
Ss., *semi,* a half.
St., *stet,* let it stand ; *stent,* let them stand.
Sub fin. coct., *sub finem coctionis,* towards the end of boiling, when the boiling is nearly finished.
Sum. tal., *sumat talem,* let the patient take one such as this.
Summ., *summitates,* the summits or tops.
Sum., *sume, sumat, sumatur, sumantur,* take, let him or her take, let it be taken, let them be taken.
S. V., *spiritus vini,* spirit of wine.
S. V. R., *spiritus vini rectificatus,* rectified spirit of wine.
S. V. T., *spiritus vini tenuis,* proof spirit.
Tabel., *tabella,* a lozenge.
Temp. dext., *tempori dextro,* to the right temple.
T. O., *tinctura opii,* tincture of opium.
T. O. C., *tinctura opii camphorata,* camphorated tincture of opium.
Tra., *tinctura,* tincture.
Ult. præscr., *ultimo præscriptus,* last prescribed.
V. O. S., *vitello ovi solutus,* dissolved in the yolk of an egg.
Vom. urg., *vomitione urgente,* the vomiting being troublesome.
V. S. B., *venæsectio brachii,* bleeding from the arm.
Zz., *zingiber,* ginger.

SYMBOLS USED IN PRESCRIPTIONS.

℞. *Recipe,* take. This sign is really a modification of the symbol ♃, which was the old heathen invocation to Jupiter, imploring his blessing on the prescription.
gr. *granum,* a grain, the 60th part of a drachm.
℈. *Scrupulus,* or *scrupulum,* a scruple = 20 grains troy.
ʒ. *Drachma,* a drachm = 3 scruples.
℥. *Uncia,* an ounce troy.
℔. *Libra,* a pound weight.
♏. *Minimum,* a minim, the 60th part of a fluidrachm.
fʒ. *Fluidrachma,* a fluidrachm, the 8th part of a fluidounce.
f℥. *Fluiduncia,* a fluidounce, the 20th part of a pint.
O. *Octarius,* a pint, the 8th part of a gallon.
C. *Congius,* a gallon.

THE PHARMACEUTICAL CALENDAR,

Containing a notice of Plants to be collected, and Operations to be performed at particular periods of the year.

JANUARY AND FEBRUARY.

Taraxacum Root is sometimes collected in these months, for the preparation of extract; but it affords a watery juice, the inspissated extract of which is different from that made in September, October, and November, when the root possesses the greatest amount of medicinal activity.

The following roots are considered by some persons to be in perfection in these months:—

Aconitum napellus.
Polygonum bistorta.
Potentilla tormentilla.
Rumex hydrolapathum.
Eryngium campestre.
Inula helenium.

Savine (*Juniperus sabina*) is in proper condition for making the ointment, and for distilling for the oil.

Few vegetables excepting some cryptogamic plants, such as Boletus igniarius, Boletus laricis, and Cetraria islandica, are collected in these months.

Any operations which require a low temperature should be performed during the cold frosty weather which frequently prevails at this time; thus,

Oleine is obtained by separating the fluid from the congealed part of olive oil, in cold weather.

The powdering of some gums, gum-resins, and other similar substances, such as *Scammony*, *Ammoniacum*, *Aloes*, &c., is more easily effected in cold than in warm weather.

MARCH.

The flowers and leaves of Coltsfoot, (*Tussilago farfara*), are in season.

Buds of the Poplar, (*Populus nigra*,) in a fit state for the preparation of the ointment, (*Unguentum Populeum*); also for tincture.

Almond flowers and *Misleto* may be collected.

Violets begin to flower.

APRIL.

Violet flowers, (*Viola odorata*,) for making syrup, and for drying.

Asarabacca, (*Asarum Europæum*.)

Great Celandine, (*Chelidonium majus*.)

Scurvy-grass, (*Cochlearia officinalis*,) are in season during this and the next month.

Roots of Eryngo, (*Eryngium campestre*,) may be obtained for candying.

The entire plant of Taraxacum, (*Taraxacum dens-leonis*,) which is sometimes used medicinally, is collected in this and the next month.

MAY.

Roots of Horseradish, (*Cochlearia armoracia*,) for making the spirit, or distilled water.

Flowers of Hearts-ease, (*Viola tricolor*,) are occasionally used medicinally; they are more extensively employed as a substitute for *Viola odorata* in making syrup of violets; but this practice is very unjustifiable, and the substitution ought to be carefully guarded against.

Tops of Wormwood, (*Artemisia absinthium*,) and *Juniper*, (*Juniperus communis*,) may be collected. Also,

Cuckoo-flowers, (*Cardamine pratensis*,) and

Cowslips, (*Paralysis vulgaris*.)

JUNE.

Tops of Wormwood, (*Artemisia absinthium*.)

Tops of Broom, (*Spartium scoparium*,) in season.

Wormwood is collected during this and two following months, for making extract, and for distilling oil.

Monkshood, (*Aconitum napellus*);

Belladonna, (*Atropa belladonna*);

Hemlock, (*Conium maculatum*):

Foxglove, (*Digitalis purpurea*);

Henbane, (*Hyoscyamus niger*);

Lettuce, (*Lactuca sativa*, and *Lactuca virosa*); to be obtained while in flower during this and next month, for the preparation of extract and the preservation of the leaves.

Soap-wort, (*Saponaria officinalis*,) for making extract.

Elder-flowers, (*Sambucus niger*,) during this and part of next month, for preserving and for making elder-flower water.

Petals of Red Poppy, (*Papaver rhœas,*) should be collected in dry weather, for making the syrup.

Roses, (*Rosa centifolia,* and *Rosa gallica,*) are in season during this and next month for making rose-water, and for drying the petals.

The leaves of Leopard's-bane, (*Arnica montana.*)

The leaves of Elder, (*Sambucus niger,*) for making elder ointment and green oil.

Rosemary, (*Rosmarinus officinalis.*)

Wake-Robin, or *Cuckoo-pint,* (*Arum maculatum.*)

JULY.

Many of the plants mentioned under last month are in season also during this.

Seeds of Colchicum, (*Colchicum autumnale,*) are collected in this, or the end of last, month.

Capsules of White Poppy, (*Papaver somniferum,*) may be obtained in the green state, for making extract, which, prepared at this period, is preferred by some persons.

Roots of Tormentil, (*Potentilla tormentilla,*) common in dry, hilly pastures.

Peppermint, (*Mentha piperita.*)

Pennyroyal, (*Mentha pulegium.*)

Mint, (*Mentha viridis,*) supplied for making distilled waters.

Lavender flowers, (*Lavendula vera,*) in season.

Garlic, (*Alium sativum,*) comes into season this month.

The Cormi of Meadow Saffron, (*Colchicum autumnale,*) are sometimes dug up towards the latter end of the month.

The fruit of Squirting Cucumber, (*Momordica elaterium,*) is in a fit state for the preparation of *Elaterium* during the latter end of this, and part of next month.

Rosemary, (*Rosmarinus officinalis,*) for distilling.

Green Tobacco leaves, (*nicotiana tabacum,*) for making *Tobacco ointment,* are to be obtained about this period of the year.

The following herbs may be obtained in the fresh state :—

Common Balm, (*Melissa officinalis.*)
Hyssop, (*Hyssopus officinalis.*)
Horehound, (*Marrubium vulgare.*)
Melilot, (*Mililotus* cærulea*.*)
Yarrow, (*Achillea millefolium.*)
Common Sorrel, (*Rumex acetosa.*)
Wood-sorrel, (*Oxalis acetosella*)

AUGUST.

Flowers of Camomile, (*Anthemis nobilis,*) are gathered during this month and next. The wild camomile is more active than the cultivated. There is a distinct variety that yields a blue coloured oil.

The Cormi of Meadow-Saffron, (*Colchicum autumnale,*) are in perfection during this and next month.

The Squirting Cucumber, (*Momordica elaterium,*) is generally in a better condition for yielding elaterium in this than in the previous month. The pepo's should be gathered after some of the most forward have discharged the seed. They are generally gathered too early.

Green Tobacco leaves, (*Nicotiana tabacum,*) may still be obtained. The preparation of the ointment should not be neglected.

Poppy Capsules, (*Papaver somniferum,*) are becoming ripe. They are more active if they are gathered before they are quite ripe.

Stramonium, (*Datura stramonium.*) The herb is now fit for collecting.

White Briony-root, (*Bryonia dioica.*)
Black Briony-root, (*Bryonia nigra.*)
Winter Cherry, (*Physalis alkekengi.*)

Pomegranate, or *Balaustine flowers,* (*Punica granatum,*) in season.

The Hop, (*Humulus lupulus,*) grows wild in many parts of the country, and may be collected at this period for medicinal use. Commercial hops are exposed to the vapour of sulphur, during the drying process to which they are submitted, by which the flavour is somewhat injured.

The fruit of the Mulberry, (*Morus nigra,*) is coming to maturity. The ripe fruit should be used for the syrup.

The fruit of Barberry, (*Berberis vulgaris,*) ripe. When prepared as a conserve, it forms, with water, an agreeable and refreshing beverage in fevers.

Root of Marsh-mallow, (*Althæa officinalis,*) is in the best condition for yielding the mucilage on which its medicinal efficacy depends.

Root of Angelica, (*Archangelica officinalis,*) may be obtained for candying.

The fruit of Buckthorn, (*Rhamnus catharticus,*) found in woods and hedges. The unripe berries are used as a yellow dye. The juice of the ripe fruit, when inspissated, forms sap-green; it also enters into the composition of the syrup of buckthorn. These preparations should be made about this time. It is often later than this before the fruit ripens.

SEPTEMBER.

Hips, fruit of Dog-rose, (*Rosa canina,*) collected from the hedges, for making Conserve of Hips.

Elder-berries, (*Sambucus niger,*) collected from the hedges for making Elder Rob.

Buckthorn-berries, (*Rhamnus catharticus,*) may also be collected now.

This is the season for collecting the following roots :—

Roots of *Aconitum napellus.*
,, *Archangelica officinalis.*
,, *Arnica montana.*
,, *Althæa officinalis.*
,, *Glycyrrhiza glabra.*
,, *Helleborus niger.*
,, *Polygonum bistorta.*
,, *Rumex aquatica.*
,, *Valeriana officinalis.*

The Root of Taraxacum, (*Taraxacum dens-leonis,*) is now filled with a white milky juice, which it yields in abundance, and which, when inspissated, forms a bitter and efficacious extract. The extract should be made during this and following month.

The Rhizomes of Male fern, (*Aspidium filix mas,*)
,, *Sweet flag,* (*Acorus calamus,*)
,, *Orris,* (*Iris florentina,*)
,, *White Hellebore,* (*Veratrum album,*)

may be collected; also,

The Cormi of indigenous Salep, (*Orchis mascula.*)

OCTOBER.

Some of the fruits already noticed are still in season.

The fruit of the Juniper, (*Juniperus communis,*) may be collected.

This is the month for collecting most barks.

Saffron, the stamens of *Crocus sativus,* is gathered during this month.

Quince seeds, (*Pyrus cydonia,*) may be got at some of the fruit-shops.

Eringo root, (*Eryngium campestre,*) is again in season for candying.

Taraxacum Root is still in a good state for making extract.

The Bark of Mezereon-root, (*Daphne mezereum,*) may be collected. It is not yet too late for *Buckthorn-berries.*

NOVEMBER AND DECEMBER.

The tops of Savine, (*Juniperus sabina,*) may be got for making the ointment.

The stems of Woody Nightshade, (*Solanum dulcamara*) are collected.

Liquorice Root, (*Glycyrrhyza glabra,*) in season.

Note. I am indebted to Mr. Butler, of Covent Garden, for some assistance in preparing this Calendar.—T. R.

ANIMALS YIELDING PRODUCTS
EMPLOYED IN
MEDICINE, DOMESTIC ECONOMY, AND THE ARTS.

CLASSIFICATION OF ANIMALS.

The following arrangement of the animal kingdom was adopted by Cuvier, whose system has been followed, although in some cases with modifications, by most subsequent writers on this branch of natural history.

GENERAL DISTRIBUTION OF THE ANIMAL KINGDOM INTO FOUR GREAT DIVISIONS.

If, on entering upon a consideration of the animal kingdom, we divest ourselves of previous opinions founded on the divisions formerly recognized, and direct our attention merely to the organization and nature of animals, and not to their size, their use, the greater or less extent of knowledge which we have of them, nor to any of the other accessory circumstances connected with them, we shall find that there are four principal or leading forms—four general plans, according to which all animals seem to have been modelled, and the ulterior divisions of which, under whatever title naturalists may think fit to characterize them, are but slight modifications, founded on the developement or addition of some parts, which occasion no essential change in the nature of the plan.

I. Animalia Vertebrata. *Vertebrate Animals.* In this, the first of these forms, which is that of man and the animals most closely resembling him, the brain and principal trunk of the nervous system are enclosed in a bony envelope, consisting of the cranium and vertebræ; to the sides of this middle column are attached the ribs and the bones of the extremities, which constitute the frame-work of the body; the muscles, in general, cover the bones, which they bring into action; and the viscera are enclosed within the head and the trunk.

Animals of this form all have red blood; a muscular heart; a mouth with two jaws placed the one above or anteriorly to the other; distinct organs for sight, hearing, smell and taste, all placed in the cavities of the face; never more than four extremities; sexes always distinct; and a similar distribution of the medullary masses and of the principal branches of the nervous system.

On examining more closely each of the parts of this great series of animals, we invariably find some analogy, even in the species most remote from each other, and we can trace the gradations of one and the same plan from man even to the last of the fishes.

II. Animalia Mollusca. *Molluscous Animals.* In this, the second form, there is no skeleton; the muscles are merely attached to the skin, which forms a soft envelope, capable of contracting in different directions; in which stony laminæ, called shells, are produced in several species, the position and production of which are analogous to those of the corpus mucosum; the nervous system is, together with the viscera, in this general envelope, and is constituted of several scattered masses, united by nervous filaments, and the chief of which, placed on the œsophagus, is called the brain. Of the four proper senses, we only distinguish the organs of that of taste and of that of vision; even these latter are frequently wanting. Only one family exhibits organs of hearing. There is always a complete system of circulation, and of the particular organs for respiration. Those of digestion and of the secretions are nearly as complex as in the vertebrate animals.

III. Animalia Articulata. *Articulated Animals.* This, the third form, is that observed in insects, worms, etc. The nervous system consists of two long cords, extending along the abdomen, swelling out at different intervals into knots or ganglions. The first of these knots, placed above the œsophagus, and called the brain, is scarcely larger than those placed along the abdomen, with which it communicates by filaments which encompass the œsophagus like a necklace. The envelope of the trunk is divided by transverse folds into a certain number of rings, the integuments of which are sometimes hard, sometimes soft, and the muscles are always attached to the interior. The trunk frequently carries articulated members at its sides; frequently, too, it is destitute of them.

It is among these that we observe the transition from the circulation in short vessels to nutrition by imbibition; and the corresponding transition from the respiration in the circumscribed organs, to that which takes place by tracheæ and air-vessels diffused throughout the entire body. The organs of taste and of sight are most distinct in them; only one family exhibits those of hearing. The jaws, when they have any, are always lateral.

IV. Animalia Radiata. *Radiated Animals.* In all the preceding classes of animals, the organs of motion and of the senses are arranged symmetrically on two sides of an axis. There is a posterior aspect, as well as an anterior, both dissimilar. In the animals of this division they are like radii around a centre, and this is true even when there are but two series, for then the two aspects are similar. They approximate to the homogeneousness of plants; we see in them neither a distinct nervous system, nor organs of particular senses; in some we scarcely perceive traces of a circulation; their respiratory organs are almost always on the surface of their body; most of them have but a short sac, for the entire intestine, and the lowest families present but a sort of homogeneous pulp, possessing moving and sensitive properties.

The following table exhibits the distribution of the animal kingdom into the foregoing four great divisions, and these latter into nineteen classes.

	General Forms.	Classes.	
Animals.	I. Vertebrate.	Mammalia (*Mammals*)	1
		Aves (*Birds*)	2
		Reptilia (*Reptiles*)	3
		Pisces (*Fishes*)	4
	II. Molluscous.	Cephalopoda	5
		Pteropoda	6
		Gasteropoda	7
		Acephala	8
		Bracheopoda	9
		Cirrhopoda	10
	III. Articulated.	Annelida	11
		Crustacea	12
		Arachnida	13
		Insecta	14
	IV. Radiated or Zoophyte.	Echinodermata	15
		Intestinalia	16
		Acalepha	17
		Polypa	18
		Infusoria	19

First Division of the Animal Kingdom.

VERTEBRATA. (Cuv.)—VERTEBRATE ANIMALS.

Myelencephala, (Owen.) *Spinecerebrata.* (Grant.)

CLASS I. MAMMALIA.

The Mammalia have a heart with two auricles and two ventricles. They have a perfect and complete circulation of the blood; that is to say, the whole of the blood which returns from the extremities of the body passes through the lung, before returning to nourish them. The females nourish their young for some time after birth by means of organs called *mammæ.* They have in general four extremities. (The cetacea have but the rudiments of the posterior extremities.)

The number of vertebræ varies; there are three kinds,—the *cervical,* the *dorsal,* and the *lumbar.* Man, who is comprised in this class, has the body naturally vertical, by which he is distinguished from the others, which are quadrupeds, and covered with hair, or cetacea.

The mammalia are divided into nine orders, and these into families, genera, sub-genera, and species. The following is a table of the orders:

				Orders.
Class 1st. Mammalia.	Having nails, or unguiculated.	Three sorts of teeth; *molar, canine, incisor.*	Thumb free.	1. Bimana. 2. Quadrumana.
			Without thumb, or fingers united.	3. Carnaria. 4. Marsupialia.
		Less than three kinds of teeth.	Absence of canine teeth.	5. Rodentia.
			Absence of incisors.	6. Edentata.
	Having hoofs, or ungulated.	Not ruminant.		7. Pachydermata.
		Ruminant.		8. Ruminantia.
	Having the extremities obliterated.			9. Cetacea.

ORDER 1. BIMANA.

HOMO. *Man.* This is the only genus in this order. In the present day, the only product obtained from the human body for use in medicine is urea, which is sometimes procured from human urine. In the old Pharmacopœias, many other products or parts were included in the Materia Medica. The Lond. Pharm., 1639, orders, *the "ostriquetrum" of the human skull;—human fat;—human excrement;—human milk;—human blood;—*

and *human urine.* The Lond. Pharm., 1650—*the skull of a man who has suffered a violent death*, and *mummy*, which was a favourite remedy. The Lond. Pharm., 1677,—*calculus from the human bladder.* Other parts were used in medicine about the period of the above dates, such as *the parings of the nails*, which was esteemed a good emetic; *the wax of the ears*, and *the moss growing on a dead man's skull*, were also used.

ORDER 2. QUADRUMANA.

Animals of this order are distinguished by having four extremities, each of which is furnished with long flexible fingers, and a thumb capable of being opposed to the fingers, in the same manner as in the human hand. Hence the name of the order.

SIMIA. *The Monkey.* One of the Bezoars formerly esteemed in medicine, was said to be obtained from the intestine of a species of monkey.

ORDER 3. CARNARIA (Carnassiers, *Cuv.*)

The animals included in this order, possess, like man and the quadrumana, three kinds of teeth, but have no thumb capable of being opposed to the fore-fingers.

They all live on animal substances, and so much the more exclusively as their molar teeth are more cutting. Those which have them either entirely or in part tuberculated, consume more or less of vegetable substances. The articulation of their lower jaw admits of no lateral or horizontal motion; the mouth can merely open and shut.

There are three families of the Carnassiers; viz. the *Cheiroptera*, *Insectivora*, and *Carnivora.*

The CHEIROPTERA have some affinity to the quadrumana, by having the mammæ on the chest. Their distinctive character consists in a fold of skin which, commencing at the sides of the neck, extends between their four feet and their fingers, sustains them in the air, and even allows those to fly that have the hands sufficiently developed.—*Ex.* The *Vespertilio*, or *Bat.*

The INSECTIVORA, like the Cheiroptera, have the molar teeth, set with conical points; they generally live a nocturnal and subterraneous life. They have not, like bats, lateral membranes, and still they never want clavicles; their feet are short; their mammæ are placed beneath the abdomen; none of them have a cœcum. They vary in the position and relative properties of their incisor and canine teeth.—*Ex.* The *Erinaceus*, or *Hedge-hog.*

The CARNIVORA. In the two preceding families, the comparative weakness of the animals, and the presence of conical tubercles on their molar teeth, oblige them to confine their carnivorous propensities to the destruction of insects. It is in the Carnivora, alone, that the sanguinary appetite is combined with the strength necessary to gratify it. This family is characterised by four large and long canine teeth, separated one from the other, between which there are six incisors in each jaw.

This family has been sub-divided into three tribes :—
1st. *Plantigrade*, comprising the Bear, Badger, &c.
2nd. *Digitigrade*, comprising, the Dog, Cat, Tiger, &c
3rd. *Amphibious*, comprising the Phoca, &c.

FAMILY 1. Cheiroptera. (χειρ, hand, and πτερον, wing).

VESPERTILIO. (Linn.) *The Bat.*

Hab. Dark places in general; they fly abroad in the evening.

Food. Gnats, flies, flesh, &c.

Use. The flesh of the animal is said to have been used by Galen against the gout. Avicenna employed an oil obtained from it in the same disease.

FAMILY 2. Insectivora.

ERINACEUS EUROPÆUS. (Linn.) *The Hedge-hog.*

Dental Formula.—Incisors $\frac{6}{2}$; canines O ; Molars $\frac{7-7}{7-7}=36$.

Hab. Everywhere, except Crete, according to Pliny.

Food. Various fruits, as well as insects.

Use. The *adeps* is mentioned as a simple in some of the old Pharmacopœias. This was considered useful in diarrhœa.

TALPA EUROPÆA. (Linn.) *The Mole.*

Hab. Almost everywhere; they lead a subterraneous life.

Food. Worms, roots of herbs, &c.

Use. The excrements of the mole, mixed with honey, were supposed useful in scrofulous ulcers. The earth cast up with the head " helps wens and imposthumes." " The ashes of a mole taken inwardly with beer or wine, help running gout."

FAMILY 3. Carnivora. *Tribe* 1. *Plantigrade.*

URSUS AMERICANUS. (Pallas.) *The American Black Bear. The Sass* of the Chippewayan Indians.

Hab. Every wooded district of the American continent, from the Atlantic to the Pacific, and from Carolina to the shores of the Arctic Sea.

Food, habits, &c. Its chief food seems to be berries of different kinds—also roots, insects, fish, eggs, birds, and quadrupeds; it, however, prefers vegetable diet. It generally selects a spot for its den under a fallen tree. Dr. Richardson allots sixteen weeks as the probable time of gestation to the American Black Bear. It is, however, so characteristic for the female to conceal itself, that little can be known with certainty on this point, with respect to either the brown or black bear. "No man, Christian or Indian," according to Brickell, "ever killed a she bear with young." Aristotle made the same remark long since, in Chap. xxx., Book vi. *Κυουσαν δε αρκτον εργον εστι λαβειν.*

Use. The skin of the black bear, was formerly sold at from twenty to forty guineas; it now hardly fetches more than so many shillings. The soft fat obtained from different species of the bear has long been celebrated as an application for promoting the growth and preservation of the human hair.

URSUS ARCTOS. (Linn.) *The Brown Bear.* Αρκτος, of Aristotle.

Dental Formula.—Incisors $\frac{6}{6}$; canines $\frac{1-1}{1-1}$; molars $\frac{6-6}{7-7}=42$.

Hab. Mountainous districts of Europe, from very high latitudes in the north, (Arctic Circle,) to the Alps and Pyrenees in the south: Siberia, Kamschatka, and even Japan to the eastward, and a portion of the northern regions of America, Africa, and the Molluccas.

Food, habits, &c. The brown bear is a solitary animal. Its retreat, during hybernation, is the natural hollow of a tree or some cavern; or, for want of these, some habitation constructed by the animal itself. The bear was at one time common in the British isles. The Laplanders hold this bear in great veneration. Seven months is the period of gestation.

Use. To the Kamschatkans this bear seems to have given the necessaries and even the comforts of life. The skin forms their beds and coverlets, bonnets and gloves. The flesh and fat are dainties; of the intestines they make covers for their faces, to protect them from the glare of the sun in spring, and use them for glass over their windows.

URSUS GULO. (Linn.) *Common Glutton,* or *Wolverene.*

Dental Formula.—Incisors $\frac{6}{6}$; canines $\frac{1-1}{1-1}$; molars $\frac{4-4}{5-5}$ or $\frac{5-5}{6-6}=36$ or 38.

Hab. The northern part of the American continent—Lapland. According to Lesson, the animal inhabits a complete circle round the North Pole in Europe and Asia, as well as America.

Food, &c. It feeds chiefly, according to Dr. Richardson, on the carcases of beasts which have been killed by accident. The wolverenes are represented as extremely mischievous, doing more injury to the small fur-trade, than all other animals conjointly. They follow the marten-hunter's path round a line of traps, extending forty, fifty, or sixty miles, and render the whole unserviceable, merely to come at the baits, which are generally the head of a partridge or a bit of dried venison.

Use. Chiefly valued for their furs.

URSUS MELES. (Storr.) *The Badger.*

Dental Formula.—Incisors $\frac{6}{6}$; canines $\frac{1-1}{1-1}$; molars $\frac{4-4}{6-6}$= 36.

Hab. The whole of Europe; Northern and Central Asia, and North America.

Food, habits, &c. The badgers sleep all day at the bottom of their burrows, and move about at night in search of food, which consists of rabbits, game, lambs, roots, and fallen fruits. Their habits are in general solitary.

Use. Their flesh is relished as an article of food.

It may be well to remark that the *Meles* of Cuvier, a genus of plantigrade carnivorous animals, included by Linnæus among the bears, has been, as well as the gluttons, racoons, &c., separated from that group by succeeding naturalists.

FAMILY 3. Carnivora. *Tribe* 2. *Digitigrade.*

CANIS.

Dental Formula.—Incisors $\frac{6}{6}$; canines $\frac{1-1}{1-1}$; molars $\frac{6-6}{7-7}$= 42.

According to M. F. Cuvier, dogs in general have forty-nine teeth; viz. six incisors, two canines, three false molars, one carnassier, and two tubercular teeth in the upper jaw; and six incisors, two canines, three false molars, one carnassier, and two tubercular teeth in the lower jaw.

Fore-feet with five toes; hind-feet with four toes; claws not retractile.

CANIS FAMILIARIS. (Linn.) *The Domestic Dog.*

Hab. In all countries.

Food. Chiefly flesh.

Use. In the editions of the Lond. Pharm. of 1618, 1650, and 1677, the adeps, as also the excrement (album græcum) of this animal were ordered as articles of the Materia Medica. Various and extraordinary virtues were ascribed to the different parts of the dog; a young puppy applied to the bowels was considered capable of affording relief. The fat was supposed good in paralysis.

CANIS LUPUS. (Linn.) *The Wolf.*

Hab. It may be found from Egypt even to Lapland, and it seems to have passed into America.

Food. Chiefly the flesh of animals. This is perhaps the most voracious of all the carnivora.

Uses. In the Lond. Pharm., 1618, the liver and intestines of the wolf are enumerated among the *Medicamenta Simplicia*, and the same parts, as well as the adeps, in the Lond. Pharm. of 1650. The *adeps* was employed as an ointment among other articular remedies. Pliny mentions it as an application mollifying the uterus, and also as being useful in ophthalmia tarsi. The *liver* was recommended in hepatic diseases. Avicenna employed it in indurated liver.

CANIS VULPES. (Linn.) *The Fox.*

Hab. In Russia, the Alps, England, &c., from Sweden, in fact, to Egypt. The animal is also an inhabitant of the new continent of America.

Food. Hens, geese, hares, &c. &c. &c.

Uses. The *adeps* has been mentioned among the simples in some of the Pharmacopœias. It appears to have had the character of a resolvent, antispasmodic, and anodyne.

FELIS.

Dental Formula.—Incisors $\frac{6}{6}$; canines $\frac{1-1}{1-1}$; molars $\frac{4-4}{3-3}=30$

(The formation of these teeth is beautifully shown in four preparations in the museum of the R. C. Surgeons, London; see Nos. 329, 330, 331, 332; Catalogue, Physiological Series,—Gallery, V. i., p. 93.)

FELIS CATUS. (Linn.) *The Cat.*

Hab. In its original state of wildness an inhabitant of the forests of Europe. In its domesticated state, in which its appearance becomes much modified, it is to be found in almost all countries.

Food. Flesh, in general, and fish.

Uses. Various medicinal properties have been assigned to the parts of this animal. The flesh it was supposed "helpeth the pain of hæmorrhoids, heateth the reines, and helpeth the pain of the back."—*Ursin.* "The fat of a wild cat is of like nature with the flesh."—*Sylvius.* "The ashes of the head of a black cat, burned in a glazed vessel, and put into the eye with a quill, helpe the haw, wert, and web in the eye. And if there be heat in the night, two or three oak-leaves applied wet in water help the same."—*Galen.* "The liver burned and drunk helpeth the stone."—*Pliny.*

FELIS LEO. (Linn.) *The Lion.*

Hab. This animal, which was formerly to be found in several parts of Europe, Asia, and Africa, is now almost entirely confined to Africa, and some of the adjoining parts of Asia.

Food. Flesh in general, more especially that of men, beasts, and birds.

Use. We find the fat of the lion enumerated among the simples in the Lond. Pharm. of 1618. Various, and many of them very fanciful virtues, were assigned to it by the old physicians. According to Galen, lion's fat resists poison; used with wine it expels evil beasts, and the smell drives away serpents. According to Pliny, mixed with oil of roses, it preserves and whitens the skin of the face. Injected in the form of a clyster, it relieves dysentery.

Felis lynx. (Temm.) *The Lynx.*

Hab. The *Felis lynx,* originally an inhabitant of the temperate parts of Europe, has almost entirely disappeared from the populous countries of that quarter of the globe. It is still to be found in the Pyrenees, the mountains in the kingdom of Naples, and according to some, in parts of Africa.

Food. Flesh of beasts, as cats, &c.

Use. The *ungula,* or hoof of the animal, is enumerated among the simples of the Lond. Pharm. of 1618. It was supposed to possess certain virtues in the cure of the "fallen sickness," and in the treatment of nervous and spasmodic diseases in general.

Felis pardus. (Linn.) *The Leopard.*

Hab. Africa, and some parts of Asia.

Food. Flesh, as of dogs, apes, and lambs.

Use. The *adeps* of this animal is among the simples of the Lond. Pharm. of 1618. It was supposed to be beneficial in paralysis, and nervous affections of the heart. Mixed with oil of bays, it was "found useful in ringworm."

Felis tigris. *The Tiger.*

Hab. Chiefly Asia.

Food. The flesh of animals, chiefly that of goats.

Use. The Indians are said to use the buttocks as meat.

Lutra communis. (Mustela lutra. Linn.) *The Common Otter.*

Dental Formula.—Incisors $\frac{6}{6}$ canines $\frac{1-1}{1-1}$; molars $\frac{5-5}{5-5}=36$.

Hab. In various parts of Europe; they inhabit the rivers, on the banks of which they are frequently seen.

Food. Fishes, tops of plants, fruits and barks.

Use. Various and absurd uses, not worth noticing in this place, have been assigned to them.

Mustela furo. (Binn.) *The Ferret.*

Hab. Almost everywhere.

Food. Mice, moles, serpents, hares, eggs.

Use. The blood, drunk in wine, was considered good against the stings of scorpions, according to Dioscorides. According to Galen, the *liver* "helps the epilepsy." "The *lungs* help diseases of the lungs.

VIVERRA. (Cuv.)

Generic characters. A deep pouch situated between the anus and the sexual organs, divided into two bags, filled wth an abundant concrete secretion, of the consistence of *pomade*, exhaling a strong musky odour, secreted by glands which surround the pouch. Pupil of the eye round during the day. Claws only half retractile.

Dental Formula.—Incisors $\frac{6-6}{6-6}$; canines $\frac{1-1}{1-1}$; molars $\frac{6-6}{4-4}$= 48.

Of the genus Viverra there are two species commonly described, the *Viverra civetta*, or African Civet Cat, and the *Viverra zibetha*, the Asiatic Zibet Cat.

VIVERRA CIVETTA. (Linn.) *The Civet.*

Ash-coloured, irregularly barred and spotted with black; the tail less than the body, black towards the end, with four or five rings near its base; two black bands surrounding the throat, and one surrounding the face; a mane along the whole length of the spine and tail that bristles up at the will of the animal.

Habitat. The dry and mountainous regions of Africa from 31° N. lat., to 25° S. lat.

Habits, &c. In its habits the civet approaches rather near to the foxes and smaller cats. In a state of captivity, it becomes in a degree tame, but never familiar, and is dangerous to handle. The young are fed on farinaceous food, with a little flesh or fish, and the old on raw flesh. Many of them are kept in North Africa for the sake of the perfume, which bears the name of the animal, and brings a high price. The secretion of *Civet* is favoured by scraping the pouch with an iron spatula about twice a week. About a dram is obtained each time.

VIVERRA ZIBETHA. (Linn.) *The Zibet.*

Ash-coloured, spotted with black; black half rings on the white tail, and black bands on the sides of the neck.

Habitat. Between 31° N. lat., and 9° S. lat., in Hindostan, Malabar, Ceylon, Bengal, Siam, &c. &c., to the Philippine islands, and the island of Buro. From the Philippines it is said to have been carried to America, and lived in the wild state in Guatimala, Mexico, Nicaragua, Cuba, &c.

Habits, &c. Similar to those of the African species, except that, according to Müller, its bite is dangerous, and it burrows in the ground like the rabbit.

The specific names *civetta* and *zibetha* are derived from the Arabic. The substance obtained from the *Rasse** agrees with the civet afforded by the *Viverra civetta* and *zibetha* in colour, consistence, and odour. It is a very favourite perfume among the Javanese, and applied both to their dresses, and, by means of various unguents and mixtures of flowers, to their persons. Even the apartments and the furniture of the natives of rank are generally scented with it to such a degree as to be offensive to Europeans.

As subgenera of the Viverra, Cuvier mentions the Genetta and Paradoxurus.

VIVERRA GENETTA. (Linn.) *Genet.*

Subgeneric character. Odoriferous pouches reduced to a slight depression, formed by the projection of the glands, and without any perceptible excretion, although the odour is manifest. The pupil has a vertical slit, and the claws are retractile, as in the cats.

Description. Gray, spotted with small black or brown patches, sometimes round, sometimes oblong; the tail, which is as long as the body, is ringed with black and white, the black rings being to the number of nine or eleven. White spots on the eye-brow, cheek, and on each side of the end of the nose.

Hab. From south of France to the Cape of Good Hope. It prefers lowlands, the banks of rivers, and the neighbourhood of springs.

PARADOXURUS. (Fr. Cuv.)

Sub-generic character, generally that of the Civets and Genets. Tail capable of being rolled from above downwards to its base, but not prehensile. Toes five, nearly palmated; sole of foot tuberculous. Eyes with pupils slit longitudinally. No pouch.

Dental Formula.—Incisors $\frac{6}{6}$; canines $\frac{1-1}{1-1}$; molars $\frac{6-6}{6-6}$ = 40.

FAMILY 3. Carnivora. *Tribe* 3. *Amphibious.*

PHOCA COMMUNIS. (*Phoca vitulina*, Linn.) *Sea-calf, Sea-dog, or Seal.*

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* Dr. Horsfield, in his *Zoological Researches in Java*, figures and describes two Javanese *Viverræ*, viz. *Viverra Musanga*, var. *Javanica*, and *Viverra rasse*. The former of these very much infests the coffee-plantations in Java, and from this circumstance it is called the coffee-rat in several parts of that island. These injurious effects in the coffee-plantations are fully counterbalanced by its propagating the plant in various parts of the forests, and particularly in the declivities of the fertile hills. The same writer gives a description of the *V. rasse* and of the *V. zibetha*; which atter is called by the Malays *Tanggalung*.

Hab. Both sea and land. This species, according to some authors, inhabits the Caspian Sea, and the extensive fresh water lakes of Russia and Siberia.

Food. Fish.

Use. The flesh was supposed to be good in epileptic diseases. The fat was used, both internally, and externally, in female diseases. The flesh is considered delicate. The skin, fur, and oil, are used.

Phoca jubata. (Gm.) *Sea-lion* of Steller, *&c.*

Flesh of the young nutritious. Skin used for tanning.

Phoca leonina. (Linn.) *Sea-lion* of Anson ; *Sea-elephant, or Sea-horse* of the English. Yields blubber.

Order 4. MARSUPIALIA.—*Marsupial Animals.*

The marsupial animals (from *marsupium*, a pouch) bear some resemblance to the carnaria ; but are distinguished from the latter, as well as from the other mammals, by the existence of a pouch formed by the skin of the abdomen in the female, which serves to contain the young ones, which are born when they are but very imperfectly formed, until they are developed to the degree at which animals are usually born. Linnæus had given them the name of *didelphi*, a term signifying a double uterus, (or rather *twin brothers*,) δις, twice, and δελφος, uterus, or αδελφος, a brother. This order comprehends the different species of opossum, kangaroo, &c. ; but none of these animals yield anything to medicine.

Order 5. RODENTIA. (Cuv.) *Rodents.*

Essential characters. Two large incisors in each jaw, separated from the molars by a vacant space. No canine teeth. Molars with flat crowns, or blunt tubercles. Extremities, the posterior longest, terminated by unguiculated toes, the number varying according to the species. Mammæ variable in number. Stomach empty. Intestines very long. When speaking of this order, Cuvier remarks that two great incisors in each jaw could hardly seize a living prey, nor rend flesh ; they could not even eat aliments ; but they might serve for reducing them, by continued labour, into fine molecules—in a word, for gnawing them, whence the term *Rodents*, or *gnawers* (*rodo*, to gnaw.) With these weapons they attack the hardest vegetable productions, and frequently feed on wood and bark. In order to effect this, these incisors have enamel only in front, so that their posterior border being more worn away than their anterior edge, they are always kept set like a chisel. The lower jaw is articulated by a longitudinal condyle, so as to have no horizontal movement, except from behind forwards, and *vice versâ.* The molars consequently have flat crowns, the enamelled eminences of which are always transversal, so as to be in opposition to the horizontal movements of the jaw. The genera in which these eminences are simple lines, and which have the crown very flat, are more exclusively frugivorous.

CASTOR FIBER. (Linn.) *The Beaver.*

Dental Formula.—Incisors $\frac{1-1}{1-1}$; molars $\frac{4-4}{4-4}=20$.

This animal is distinguished from all the rest of the order (Rodentia) by a broad, horizontally flattened tail, which is nearly oval and covered with scales. Five toes on each of the feet; those of the hinder ones only are webbed, the webs extending beyond the roots of the nails.

Hab. Europe and Asia. The inhabitants of the former are *burrowers*, the latter *builders*.

Food. Bark of trees, fish and fruits.

Use. Castoreum, a substance contained in two sacs situated near the anus of the animal, has been used in medicine since the time of Hippocrates. It was considered to exercise a peculiar influence on the internal functions. The pods are said to be prepared by first boiling them in a ley of wood ashes, then drying and smoking them over a fire into which birch bark has been put. The *fat* of the Castor is enumerated among the simples of the Lond. Pharm. of 1618. The fur has been valued for its application in the manufacture of hats.

HYSTRIX CRISTATA. (Linn.) *The Porcupine.*

Hab. Italy, France, and Spain; also Africa and India.

Food. Various kinds of fruit and vegetables.

Use. The *flesh* was considered beneficial in various diseases, as leprosy; being salted, it was said to cure dropsy and incontinence of urine.

LEPUS.

Mr. Swainson defines the genus *Lepus* thus: cutting teeth $\frac{4}{2}$, the upper in pairs, two in front, large and grooved, and two smaller behind; lower teeth square; grinders $\frac{6-6}{5-5}$, composed of two soldered vertical plates; a sixth very small in the upper jaw; soles of feet hairy; anterior feet with five toes; posterior with four; tail very short, turned upwards.

The sub-family, *Leporina*, seems to be strictly natural, consisting entirely of those species, and they are not few, which are usually known by the name of hares and rabbits.

Dental Formula.—Incisors $\frac{4}{2}$; molars $\frac{6-6}{5-5}=28$.

The common hare, or Lepus timidus, which is generally considered as the type, is the Λαγως (Lagus) of the Greeks.

Lepus cuniculus. (Linn.) *The Rabbit.*

Hab. Originally a native of Spain, but may now be found all over Europe.

Food. Various plants and herbs.

Use. The *fat* of the rabbit is among the simples of the Lond. Pharm. 1618.

Lepus timidus. (Linn.) *The Hare.*

Hab. In most countries of Europe; also in various parts of Africa.

Food. Grass, corn, and the like.

Use. Several parts of the hare, as the *adeps*, the *astragalus*, the *blood*, &c., are enumerated among the simples in the Lond. Pharm. of 1618. Thus the brain of the hare, when roasted, was said to "help trembling, to make children breed teeth easily, their gums being rubbed with it." The small bones in the fore-feet of the hare, when pulverised, and drunk in wine, was considered powerfully diuretic.

Mus musculus. (Linn.) *The Mouse.*

Hab. Almost everywhere, in houses, and barns, &c.

Food. Bread, cheese, corn, tallow, &c. &c.

Use. The *adeps* and *excrement* of the mouse are mentioned among the simples of the Lond. Pharm. of 1618. Various virtues were assigned to the flesh of the mouse when eaten.

Sciurus vulgaris. (Linn.) *The Squirrel.*

Hab. Almost in all countries.

Food. Apples, chestnuts, walnuts, &c.

Use. The fat was recommended by Galen in ear-ache.

Order 6. EDENTATA.

This order of animals is characterised by the absence of teeth in the front jaw. Claws large. They possess more strength than agility. Cuvier divides them into three tribes.

1st. The *Tardigrades.* Example, *the Sloths* (*Bradypus*, Linn.)

2nd. The *Armadillos* (*Dasypus*, Linn.). *Chlamyphorus* comes under this tribe, as well as *Orycteropus*, *Myrmecophaga*, (*Ant-eater*,) and the *Pangolins*, (*Manis*, Linn.).

3rd. The *Monotremes.* [*Echidna*, *Ornithorynchus*, &c.]

Ornithorynchus paradoxus. (Blum.) *The Common Ornithorynchus*, or *Water-mole.*

Dental Formula.—Incisors $\frac{0}{0}$; canines $\frac{0-0}{0-0}$; molars $\frac{2-2}{2-2}=8$.

Description. Molar teeth fixed only in the gum; body covered with hairs, anteriorly terminated by a broad, depressed, duck-like beak; legs four, pentadactyle, palmated, with a spur on the hind ones in the male.

Hab. The rivers and marshes on the eastern coast of New Holland, and in the vicinity of Port Jackson.

This animal is remarkable for having the bill of a duck, and the limbs of a quadruped. The male has a spur, resembling that of the domestic cock, attached to the hinder legs, with which dangerous and even fatal wounds are inflicted.

ORDER 7. PACHYDERMATA. (Cuv.) *Pachydermes.*
(Thick-skinned—παχυς, thick, and δερμα, hide.)

Essential characters. Three kinds of *teeth.* Four *extremities,* the toes varying in number, and furnished with strong *nails* or *hoofs.* No *clavicles.*

This order is divided into three families: 1. The *Proboscidiana,* or those furnished with a proboscis, including the elephant and some fossil animals. 2. The *common Pachydermata,* including all the rest except the horse, which belongs to family 3. *Solipeda,* or solid-footed.

FAMILY 1. Proboscidiana.

The only living type of this order is the

ELEPHAS. (Linn.) *The Elephant.*

The Elephants of the present day are only found in the torrid zone of the eastern continent, where hitherto only two species have been ascertained, scil. *Elephas indicus,* (Cuv.,) the *Indian Elephant;* and *E. africanus,* (Cuv.,) the *African Elephant.*

Dental Formalæ.—African Elephant, incisors $\frac{2}{0}$; molars $\frac{4}{4}$ =10.

Asiatic Elephant, incisors $\frac{2}{0}$; molars $\frac{2}{2}$=6.

Food. Herbs, leaves of trees, various kinds of fruits, &c.

Use. Elephant's tooth was once recommended as an astringent in leucorrhœa; it was also given in yellow jaundice, and for the purpose of removing sterility in females. It forms the ivory of commerce.

FAMILY 2. Common Pachydermata.

HIPPOPOTAMUS AMPHIBIUS. (Linn.) *The Hippopotamus, River-horse.*

Dental Formula.—Incisors $\frac{4}{4}$; canines $\frac{1-1}{1-1}$; molars $\frac{7-7}{6-6}$= 38.

Hab. The rivers of the central and southern parts of Africa.

Food. Roots, and various sorts of vegetables.

Use. The fat of the animal was applied to the pulse or stomach to relieve fits of ague. The tongues are preserved by drying. The teeth (*morse-teeth*) are harder and whiter than ivory, and not so apt to become yellow; used for making artificial teeth.

RHINOCEROS UNICORNIS. (Linn.) *Rhinoceros Indicus.* (Cuv.) *The Rhinoceros.*

Dental Formula.—Incisors $\frac{4}{4}$; canines 0; molars $\frac{7-7}{7-7}=36$.

Hab. In the deserts of Africa, and several parts of Asia.

Food. Herbs and prickly shrubs.

Use. The horn was supposed to be useful in cases of poisoning, contagion, &c. The skin, steeped in wine, was supposed to be beneficial in malignant diseases.

SUS SCROFA. (Linn.) *The Hog.*

Dental Formula.—Incisors $\frac{4}{6}$ or $\frac{6}{6}$; canines $\frac{1}{1}-\frac{1}{1}$; molars $\frac{7}{7}-\frac{7}{7}=42$ or 44.

Hab. The temperate parts of Europe and Asia; northern parts of Africa; America.

Food. Various roots, and many animal and vegetable substances.

Use. Nearly every part of the pig contributes to the wants of man. The flesh, preserved in different ways, constitutes *pork*, *bacon*, *ham*, &c. The strong hairs, called *bristles*, from the neck and back, are used by shoe-makers. The skin is sometimes tanned for saddle seats. The intestines are fried and eaten, and the blood is made into a food called *black-pudding*. The fat of the animal, called *adeps suillus*, and by some *axungia*, *axunge*, or *lard*, is officinal in all the modern Pharmacopœias.

FAMILY 3. Solipeda.

EQUUS.

The family of horses, or the Equidæ, have but a single finger or toe terminating each extremity, incased in a horny hoof or shoe. There are, however, on each side of the metacarpus and metatarsus two small rudimentary processes, representing two lateral toes. The following is the form of dentition belonging to this family of Pachyderms.

Dental Formula.—Incisors $\frac{6}{6}$; canines $\frac{1-1}{1-1}$; molars $\frac{7-7}{6-6}=42$.

EQUUS ASINUS. (Linn.) *The Ass.*

Hab. Everywhere.

Food. Grass; it can eat almost any kind of food.

Use. Extraordinary medicinal virtues have been attributed to various parts of the ass's body. The ass's hoof occurs among the simples of the Lond. Pharm., 1618; it was considered an effectual discutient; when burned, it was said to be useful in epileptic and hysterical affections The flesh has been eaten and esteemed a delicacy; the skin is made into shagreen; the milk is considered nutritious.

Equus caballus. (Linn.) *The Horse.*

Hab. In almost all countries.

Food. Grass, hay, oats, &c.

Use. The fat, excrement, and hoof of this animal may be found among the simples of the Lond. Pharm., 1618. Mare's milk is laxative. The flesh and dung were considered useful in the bites of serpents. The fume of the fat "expels the dead birth and secundine." The stone found in the stomach, called *hippolithus*, was considered to possess virtues similar to those of the bezoar. The bones are boiled for the grease they contain, and burned in close vessels to make animal charcoal. The skins are tawed to make thongs of whips; and catgut is prepared from the intestines. Of all animals the horse is most useful to man.

Order 8. RUMINANTIA. (*Pecora*, Linn.)

Essential characters. No incisors in the upper jaw; eight generally in the lower. Molars twelve in each jaw, the crown marked with two double crescents of enamel, of which the convexity is outwards in the lower jaw, and inwards in the upper. No clavicles. Extremities disposed for walking. Two toes furnished with hoofs; metacarpal and metatarsal bones united; four stomachs; intestines long; two or four inguinal mammæ. Horns in the males, and often in the females of most species.

The term Ruminantia indicates the singular faculty possessed by these animals of masticating their food a second time, by bringing it back to the mouth after a first deglutition. This faculty depends on the structure of their stomachs, of which they have always four; the first is called the *paunch*, which receives the vegetable matter coarsely bruised by mastication, whence it passes into the second, called the *honey-comb*, or *bonnet*. From this second stomach the food, after being moistened and compressed into little pellets, reascends to the mouth to be re-chewed. The aliment, thus re-masticated, descends directly into the third stomach, called the *leaflet*, (feuillet,) so called from its being laminated longitudinally like the leaves of a book; and thence it descends to the fourth stomach, the *caillette*, the true organ of digestion. This order has been divided into two families, those without horns, or Akeratophora, (α priv. κερας, horn, and φερω, to carry,) and Keratophora, or those carrying horns. Under the first family are ranged the *Camelus*, (Linn.) Camel. *Moschus*, (Linn.) Musk. Under the second are contained the *Cervus*, (Linn.) Species *C. alces*, the Elk, or Moose-deer. *Camelopardalis*, (Linn.) sp. *C. girafa*, (Fr. Cuvier,) the Giraffe. *An-*

telope, (Linn.) Sp. *A. dorcas*, the Gazelle, &c. &c. *Ovis*, the Sheep, and *Bos taurus*, or common Ox.

Bos TAURUS, (Linn.) *The Ox.*

Dental Formula.—Incisors $\frac{0}{8}$; canines 0; molars $\frac{6-6}{6-6}=32$.

Hab. In every part of the world.

Food. Grass, hay, leaves, &c. &c.

Use. The importance of this animal is fully recognised for its services in tillage, for its flesh, the milk it affords, and its skin; even the horns are turned to good account. Various parts of the animal have also been recommended as useful in medicine; the blood, fat, and excrement, have been enumerated among the simples in the Lond. Pharm. of 1618. The filings of the horn, drunk with water, were thought useful in arresting hæmorrhage and intestinal fluxes. The excrement was supposed capable of discussing tumors and hard swellings.

Goldbeater's skin is prepared from the peritoneal membrane of the cœcum, which, as soon as it is detached, is pulled out to the extent of two feet or upwards, then dried. The dried membrane, which has the appearance of a piece of packthread, is then soaked in a very weak solution of potash, and spread out flat on a frame; another membrane is then taken and applied to the other, so that the two surfaces which adhered to the muscular membrane of the intestine may adhere together; they unite perfectly, and soon dry. The skins are then glued on a hollow frame, washed with alum water, dried, washed with a solution of isinglass in white wine, to which spices, such as cloves, nutmegs, ginger, or camphor, have been added, and varnished with white of egg. These skins are used to separate the leaves of gold while being beat to the proper degree of thinness; they are used also as a defensive for cuts.

The *allantoides of calves* are prepared in a somewhat similar manner to the above, for making air-balloons for lecturers, &c.

The *bladders* and *intestines* of oxen and calves are prepared by removing the fat, washing them in solution of chloride of lime, blowing them out, and then drying them. These are used for covering pots, and other similar purposes.

Bos BUBALUS. (Linn.) *The Buffalo.*

Originally a native of India, but brought to Egypt, Greece, and Italy, during the middle ages. The buffaloes generally herd in marshy places, and feed on large plants, such as would not suit our oxen. The skin makes good leather; the flesh is coarse and not much esteemed; the milk is good. Some of the buffaloes of India have very large horns, which are brought over to this country.

CAMELUS. (Linn.) *Camel.*

Dental char. Teeth, thirty-four. Sixteen in the upper jaw; viz. two incisors—for the camels and the llamas have these, and form the exceptions, the other ruminants being without any incisors in the upper jaw—two canines, twelve molars. Eighteen in the lower jaw; viz. six incisors, two canines, ten molars.

Gen. char. Lower incisors in the form of cutting wedges; upper incisors sub-lateral: canines conical, suberect, strong; false molars situated in the interdentary space on either side. Head long, ears small, neck elongated. Back with fleshy bosses or haunches; tail moderate. Toes united below. Teats ventral, four in number. There are two species.

1. CAMELUS BACTRIANUS. (Linn.) *The Bactrian Camel.*

Char. Two humps on the back. Length about ten feet. Colour generally dark brown.

Hab. Persia, Turkey, &c.

2. CAMELUS DROMEDARIUS. (Linn.) *The Dromedary.*

Char. One hump in the middle of the back. Length about eight feet. Hair pale brown.

Hab. Arabia, Africa, &c.

Use. Great virtues were assigned by the old physicians to the milk of the camel in various diseases. Avicenna states that when the camel is newly impregnated, the milk from the animal relieves asthmatic affections. According to Rhases, "it strengthens the liver, openeth obstructions, looseneth the hard spleen, and helpeth the dropsy, being drunk hot, especially sugar being mixed therewith." In the writings of Rhases and Avicenna more especially, frequent mention is made of the medicinal virtues of camel's milk.

CAPRA. (Linn.) *The Goat.*

Char. Horns directed upwards and backwards; chin generally furnished with a long beard. Forehead generally concave.

Hab. In almost all parts of the world. The *Capra ægragus*, which seems to be the original stock of our domesticated goats, dwells in troops along the mountains of Persia, and probably on those of other countries also, as on the Alps. The oriental bezoar is a concretion found in its intestines.

CERVIDÆ.

A family of solid-horned ruminants; the horns caducous, and belonging, generally speaking, to the male only.

The reproduction of the horns is annual in the deer of temperate and cold climates; it is supposed that some of the species inhabiting hot climates do not cast them every year. The palmated horn seems more especially to belong to those deer which inhabit the northern latitudes.

Dental Formula, usually the same as in the giraffes, goats, antelopes, sheep, oxen, etc.; viz.:—

Incisors, $\frac{0}{8}$; canines $\frac{0-0}{0-0}$; molars $\frac{6-6}{6-6}=32$—

In the above formula the canines are noticed as absent; this rule, however, is not without exception, some of the species presenting canines similar to those of the *Musks* (*Moschus*) in the upper jaw.

Cervus alces. (Linn.) *The Moose*, or *Elk*.

Description. As large as a horse, and sometimes larger; muzzle cartilaginous and inflated; a pendulous swelling under the throat; hair stiff, and of a more or less deep ash-colour. Horns increase with age so as to weigh from fifty to sixty pounds; body round, compact, and short; tail about four inches long. During its progress it holds the nose up. This attitude prevents it from seeing the ground distinctly; hence it sometimes trips by treading on its fore-heels, and gives itself heavy falls. From this circumstance it was supposed to have frequent attacks of epilepsy, and to be obliged to smell its hoof before it could recover. Hence the Teutonic name of *Elend*, (miserable,) and the reputation of the fore-hoofs, especially as a specific against epilepsy. The elk was undoubtedly the Αλκη of Pausanius, who describes it as being ελαφοὺ και καμηλου μεταξὺ, "between a stag and a camel." It was the *Alce* of Cæsar and Pliny.

Habitat. The marshy forests of the north of both continents, especially Sweden, Norway, Canada, Russia, Prussia, Hungary, etc.

Food. The moose-deer feeds on the tops of large plants and the leaves of trees in summer, and in the winter on the tops of willows and the small branches of the birch-tree.

Use. The flesh of the elk is said to be excellent, that of the young especially. The tongue and the nose are by some considered great delicacies. As a medicinal substance the hoof of the elk occurs among the simples of the Lond. Pharm. of 1618, as a remedy in epilepsy.

Cervus dama. (Linn.) *The Deer*.

Gen. char. Incisors $\frac{0}{8}$; canines $^{0}-\frac{0}{0}$; or $\frac{1}{0}-\frac{1}{0}$; molars $\frac{6}{6}-\frac{6}{6}$. Canines, when present, compressed, and bent back. Head. long, terminating in a muzzle. Ears, large and pointed. Body, slender. Horns solid, deciduous, palmated, branched and simple, in the males; females in general without horns.

Hab. In all parts of the world.

Food. Grass, hay, herbs, and leaves of shrubs and trees.

Use. Decoction of hartshorn nutritive and demulcent. Hartshorn shavings are ordered in the preparation of the Pulv. Ant. Compositus. The marrow of the leg of the deer, as also the suet, are among the simples ordered in the Lond. Pharm. 1618.

Cervus elaphus. (Linn.) *The Stag.*

Descript. Horns with three anterior antlers, all curved upwards, the summit forming a crown of snags from a common centre. Lacrymal sinuses. Fur red-brown in summer, with a blackish line along the back, and on either side a number of small marks of a pale fawn colour; in winter the fur is of a uniform grey-brown colour.

Hab. Europe, Asia, and north of Africa.

Use. The antlers of this species are used for the same purposes as those of the Cervus Dama.

Cervus tarandus. (Linn., Buff.) *The Rein-Deer.*

Descript. Size of a stag, but has shorter and stouter legs; both sexes have antlers divided into several branches, terminating by age in broad denticulated palms. Fur brown in summer, and becoming nearly white in winter.*

Hab. Norway, Lapland, Sweden, the northern parts of America.

Use. The flesh, the milk, and the hide contribute to the food and clothing of the Laplanders.

Moschidæ.

The Moschidæ are a family of ruminant animals familiarly known as *Musk Deer.*

Linnæus divides the genus Moschus, which he places between *Camelus* and *Cervus,* under his order *Pecora,* as having no horns, and the upper canine teeth solitary and exserted. Cuvier gives it the same position assigned to it by Linnæus. Cuvier states that the Musks only differ from the other ruminants in the absence of horns, in having a long canine tooth on each side of the upper jaw, which comes out of the mouth in the males, and finally, in having in their skeleton a slight fibula, which has no existence in the camels.

Moschus moschiferus. (Linn.) *The Musk-bearing Animal.*

Gen. Char. Incisors $\frac{0}{8}$; canines $\frac{1}{0}$ — $\frac{1}{0}$; molars $\frac{6}{6}$ — $\frac{6}{6}$ No canines in the females. Ears long and acuminated. Body slender. Feet hoofed. Two inguinal *mammæ.*

Sp. char. Fur grey-brown; hair coarse. Pouch before prepuce of the male, filled with a musky substance.

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* The ancients ascribed to this animal the power of assuming any colour it wished.

Hab. Siberia, China, and Thibet.

Food. Spikenard, and other sweet plants.

Use. Musk is a powerful stimulant and antispasmodic, and has been found a valuable remedy in all diseases attended with spasms and low fever.

Ovis aries. *The Sheep.*

Dental formula. Incisors $\frac{0}{8}$; canines $\frac{0}{0} - \frac{0}{0}$; molars $\frac{6}{6} - \frac{6}{6}$

Gen. char. Horns (generally present in both sexes) wrinkled transversely, turned laterally in a spiral form. *Ears* small. *Legs* slender. *Mammæ* two.

Sp. char. Horns arched backwards. *Colour* generally fawn.

Hab. This animal is generally domesticated everywhere.

Food. Herbs, leaves, etc.

Use. It is principally used in medicine for the suet, which is employed as a basis for ointments and cerates. The flesh both of the young and adult animal is much used as food in this country, and is considered easily digestible and nutritive.

Coarse catgut is made from the intestines, by removing the mucous and peritoneal membranes, then soaking them in water, to each gallon of which is added an ounce or two of carbonate of potash; then scraping them with a copper plate having a semicircular notch, twisting them according to the uses for which they are intended, and sometimes colouring them, and exposing them to the fumes of burning sulphur.

Fine catgut is prepared in much the same way as that above described, but more care is taken and a longer time occupied in the process.

The *cœcal intestines* are prepared by soaking them in an alkaline solution, then cleaning, scraping, stretching, sulphuring, and finally cutting them to the proper length, when they constitute the *baudruches condoms*, or *French-letters.*

Order 9. CETACEA.

These are mammiferous animals without hind feet. To the genera which, up to his time, naturalists had ranked among the *Cetacea*, Cuvier adds those which had previously been confounded with the Walruses. This order is now divided into two families:—1st. The *Herbivorous Cetaceans*, whose teeth have a flat crown, which determines their mode of life, as they often leave the water to creep and feed on the banks. They have two teats on the breast, and have hairy moustaches. 2nd. The *Ordinary Cetaceans*, which are distinguished from the preceding by the apparatus from which they have received the name of *Souffleurs*, or Blowers. They take into their capacious mouth, together with their prey, large volumes of water, the latter of which it is necessary subsequently to separate; this is effected by forcing the water through a small aperture passing from the mouth to the upper part of the head, while the prey is retained by a kind of strainer formed of the substance called *whalebone.*

The second family, the *Ordinary Cetaceans,* are subdivided into two tribes:—1st. Those, the size of whose heads bears an ordinary proportion to that of their bodies; 2nd. Those whose heads are disproportionately large.

FAMILY 1. Herbivorous Cetaceans.

HALICORE. (Ill.) *The Dugong.*

Gen. char. Body elongated; tail-fin in form of a crescent; molars composed each of two cones united by the side; small pointed tusks inserted in the incisive bones; skin very thick and without hairs.

Dental formula. Incisors $\frac{4}{6 \text{ or } 8}$; canines 0; molars $\frac{5-5}{5-5}=$ 30 or 32.

Hab. Sumatra and all the warm seas of the Indian Archipelago.

Use. Flesh superior to the buffalo or common ox.

MANATUS. (Cuv.) *Manatee. Sea-Cow.*

Gen. char. Body oblong; molar teeth marked with two transversal elevations on their crown; no canines in the adult; vestiges of nails on the edges of their anterior extremities or pectoral fins; pectoral mammæ; skin very thick and naked; whiskers very strong and close set: horizontal tail thick, tegumentary, and elongated oval.

Dental formula. Incisors $\frac{2}{0}$; molars $\frac{8-8}{8-8} = 34$.

Hab. The warmer parts of America and its islands. Western Africa.

Use. The flesh is excellent, either fresh or salted.

FAMILY 2. Ordinary Cetaceans. *Tribe* 1.

DELPHINIDÆ. *The Dolphins.*

These have an elongated body; jaws more or less projecting in the form of a beak; no tusks; they have a great number of teeth simple and equal in size, which are, however, wanting in some species; no baleen or whalebone; blow-holes, with a common opening on the head,

The *dental formula* may be stated generally as consisting of from 84 to 95 teeth in the upper jaw, and from 84 to 95 in the lower = 168 to 190.

DELPHINUS PHOCÆNA. (Linn.) *Common Porpoise.*

Gen. char. Muzzle short, convex, and not terminated in a rostrum; teeth numerous, placed irregularly in each jaw; a dorsal fin.

Dental formula. Molars $\frac{40 \text{ to } 46}{40 \text{ to } 46} = 80$ to 92.

Hab. Atlantic Ocean; seas of Europe.

This seems to be the φωκαινα (*phocæna*) of Aristotle. Some have supposed it to be the *Tursio* of Pliny. It is the *porco pesce* of the Italians (whence probably the English term *porpesse*:) the *Meerschwain* of the Germans.

Use. The oil produced from the fat surrounding the body is of the purest kind; the skin, when tanned and dressed, is used for wearing apparel. The flesh is by some much esteemed.

DELPHINAPTERUS LEUCAS. (Gm.) *Delph. albicans.* (Fabr.) *The Beluga*, or *White Whale.*

Gen. char. Head obtuse; muzzle short and conical, or terminated in an elongated rostrum; number of teeth variable; no dorsal fin.

Dental formula. According to F. Cuvier $\frac{9-9}{8-8} = 34$.

Hab. The Northern Ocean.

Use. The oil is said to be of the best, whitest, and finest quality, and of their skins a sort of morocco leather is said to be made, which, though thin, will resist a musket-ball. The flesh is said to resemble beef.

MONODON MONOCEROS. (Linn.) *Narval. Norwhal*, or *Unicorn Whale.*

Gen. char. Body elongated; a slight longitudinal projection, or crest, in place of the dorsal fin; flippers oval.

A long, straight, and pointed tusk, projecting from the upper jaw, has been long known as the *unicorn's horn.* This tusk is sometimes ten feet long, marked with spiral grooves. The animal has the germ of a second of these defensive appendages, but usually only that on the left side becomes fully developed.

Hab. The Northern Ocean.

Use. The blubber yields a very superior oil, which, as well as the flesh, is considered a great dainty by the Greenlander, who regards the norwhal as the herald of the mysticete. The ivory of the tusk is considered superior to that of the elephant.

FAMILY 2. Ordinary Cetaceans. *Tribe* 2.

BALENIDÆ, or BALÆNAS.

Gen. char. Head not so convex forward as that of the cachalot: both sides of the upper jaw furnished with transverse plates of a fibrous horny substance with loose or unwrinkled edges, being the baleen or whalebone; lower jaw entirely unarmed. No dorsal fin, which in some species is replaced by a boss or hump.

In this genus the baleen, or whalebone, is most highly developed. J. Hunter describes this extremely flexible animal substance as being of the same nature as horn,—a term used by him to express what constitutes hair, nails, claws, feathers, etc. It consists, he remarks, of thin plates of some breadth, and in some of very considerable length, their breadth and length in some degree corresponding to one another; when longest, they are commonly the broadest, but not always so. The plates differ in size in different parts of the same mouth, more especially in the large whalebone whale. "They are placed," says Hunter, "in several rows, encompassing the outer skirts of the upper jaw, similar to teeth in other animals. They stand parallel to each other, having one edge towards the circumference of the mouth, the other towards the centre or cavity."—(See Hunter on Whales.)

BALÆNA MYSTICETUS. (Linn.) *Greenland Whale.*

Description. Colour velvet-black, grey, and white, with a yellow tinge. Head very large, forming nearly one-third of the entire bulk, the under part being flat. On the most elevated part of the head are situated the blow-holes, two longitudinal apertures like the holes in the belly of a violin, and from eight to twelve inches long. There are upwards of three plates of whalebone on each side of the jaw. There is no dorsal fin. The horizontal tail is flat and semilunar, indented in the middle. The eyes not much larger. From sixty-five to seventy feet appears to be the extreme length of a full-grown mysticete.

Hab. This is usually stated to be very extensive; it is said by some that it inhabits all the seas of the globe, especially the two poles.

The *Common Whale*, *Greenland Whale*, or *Great Mysticete*, appears to be the μυστικητος of Aristotle (Hist. Anim. iii. 12;) it is the *Baleine Franche* and *Baleine Ordinaire* of the French; *Grenlands Walfisk* of the Swedes; and *Morfil Cyffredin* of the Ancient British.

Food, habits, etc. In the whale, the sense of hearing seems to be rather obtuse. Throat so narrow as scarcely to admit a hen's egg. The usual rate of swimming, about four miles an hour; but when harpooned, they will descend at a velocity of seven or eight miles an hour. The mysticete seldom remains longer than two minutes at the surface to breathe, during which period it blows eight or nine times; it then descends for five or ten minutes. Though having no voice, according to Mr. Scoresby, it makes a loud noise in blowing. The smallness of the gullet is only fitted for swallowing small animals, such as the *Clio borealis*, numerous specimens of which will be found in the preparation, No. 323 A. of the Physiological Series of the Museum of the R. C. S., London. This small mollusc is said to constitute the chief support of the mysticete, and the structure and disposition of the whalebone plates are such as to retain these or any other small species of animal in the capacious mouth of their devourer, while the water taken in along with them drains through the interstices of the plates. Nine or ten months is supposed to be the term of utero-gestation; and so attached is the mother to her young one, or "sucker," as it is called, that it is often struck as a snare to the affectionate parent, for she will not leave it, and so falls a victim to her maternal love.

Use. The mysticete is everything to the Esquimaux and the Greenlander. They eat the flesh and fat with great relish. The membranes of the abdomen serve them for clothing, and the thin transparent peritoneum admits light through the windows of their huts, whilst it keeps out the weather. The bones are made into props for their tents, or aid in the formation of their boats, and supply them with harpoons or spears. To civilized nations the oil made from its fat or blubber, and the whalebone, have long made it a great commercial object. The fat, or blubber, lies immediately beneath the skin, being from ten to twenty inches in thickness, varying in different parts of the body. The colour is not always the same, being white, red, and yellow. It is chiefly for the blubber that the Greenland fishery is carried on. It is cut from the body in large lumps, and carried on board the ships, and then cut into smaller pieces. The fleshy parts and skin connected with the blubber are next separated from it, and it is again cut into such pieces as will admit of its being passed into casks by the bung-hole, which is only three or four inches in diameter. In these casks it is conveyed home, where it is boiled in vessels capable of containing from three to six tons, for the purpose of extracting the oil from the fritters, which are tendinous fibres, running in various directions and containing the oil, or rather connecting together the cellular substance which contains it. The following table, taken from Mr. Scoresby's work, shows the average quantity of oil a whale of each size of bone will produce:—

Bone.	Oil.
1 foot	1½ tons.
2 feet	3
3	3½
4	4
5	4½
6	5½
7	7
8	9

Bone.	Oil.
9 feet	11 tons.
10	13
11	16
12	20

Physeter, or *Cachalot* (φυσαω, to blow.)

Gen. Char. Length of head = $\frac{1}{3}$ or $\frac{1}{2}$ the whole length; upper jaw large, elevated, and either without teeth, or with very few, which are short and nearly hidden by the gum; lower jaw narrow, and armed with stout conical teeth; orifices of the blow-holes united; no dorsal fin.

In a specimen given by M. F. Cuvier, and found in the Paris Museum, no teeth were observed in the upper jaw;—in the lower there were 27 on each side: = 54.

Physeter macrocephalus, or *Spermaceti Whale.*

Hab. This species has been seen in almost all seas; but it is now principally found in the Southern Ocean, on the coasts of America, Japan, New Guinea, &c. Cachalots have occasionally been stranded on the British islands, as in the Frith of Forth, the Orkneys, &c.

Use. From this animal it is that the commercial spermaceti (*cetaceum; sperma ceti*) is obtained. This substance is found in several parts of the body, mixed with the common fat. The head is, however, the great reservoir of this substance. Here, it is found (mixed with oil) in a large cavity in the upper maxillary bone, anterior to, and quite distinct from, the true cranium. There are two places in the head which contain the oil, the one above and the other below the nostrils. The purest oil is contained in the smallest cells, lying above the nostril, along the upper part of the head. The "case," as it is called, which is situated on the right side of the nose and upper surface of the head, contains spermaceti mixed with oil. Into this an opening is made, and the liquid contents are taken out by a bucket. This is called "head-matter." The spermaceti is separated from the oil by pressure, and purified by boiling it with a caustic ley. *Ambergris* is obtained from the cœcum of this animal.

CLASS II. AVES. BIRDS.

Birds are oviparous vertebrata, with a double system of circulation and respiration, organized for flight. Their distribution into orders is founded, like that of the mammalia, on the organs of manducation, or the beak, and on those of prehension. This class comprises six orders:—1. ACCIPITRES (*Birds of Prey*). 2. PASSERES (*Sparrow-kind*). 3. SCANSORES (*Climbers*). 4. GALLINACEÆ (*Poultry-kind*). 5. GRALLÆ (*Waders*). 6. PALMIPEDES (*Web-footed*).

ORDER 1. ACCIPITRES. (Linn.) *Birds of Prey.*

These birds are distinguished by their hooked beaks and talons. They are among birds what the carnaria are among quadrupeds. The muscles of their thighs and legs indicate the strength of their claws; they all have four toes; the nail of the thumb and that of the internal toe are the strongest. This order forms two families, the diurnal and nocturnal—the former including the two great genera of Linnæus, the vultures and falcons; the latter his genus of owls. These genera have been subdivided by Cuvier into several sub-genera.

FALCO BUTEO. (Linn.) *The Buzzard.*

Hab. Almost everywhere.

Food. Herbs, and the flesh of animals.

Use. The testicles boiled fresh with honey were said to strengthen those men, whose procreative powers had been enfeebled from any cause.

FALCO FULVUS. (Gm.) AQUILA. (Cuv.) *The Eagle.*

Hab. They dwell on the mountains in various parts of the globe.

Food. Birds and quadrupeds.

Use. Various parts of the eagle were supposed to be endowed with medicinal virtues. The bones of the head were considered good for removing head-ache. The wings placed under the feet promoted labour. The gall was converted into an errhine, in affections of the head. The brain steeped in wine useful in jaundice. The tongue in incontinence of urine.

FALCO MILVUS. (Linn.) *The Kite.*

Hab. In almost all countries.

Food. Birds, carrion, and the like.

Use. The powder of the flesh "helpeth the gout." "The testicles drunk fasting with spring water promotes fecundity." "The blood applied with nettles helps the gout."

STRYX OTUS. (Linn.) *The Owl.*

Hab. England, France, Germany, and several other places.

Food. Wasps, bees, lizards, and mice.

Use. The flesh was recommended in paralysis and in melancholy. The brain eaten, removed head-ache. The gall used to remove specks from the cornea.

VULTUR GRYPHUS. (LINN.) *The Vulture.*

Hab. Various parts of Asia and America, more especially South America.

Food. Dead bodies; birds.

Use. The flesh was used to remove various tumours in the body, as also gout and convulsion. The brain used to remove head-ache. The liver considered a prophylactic against the bites of serpents. The fume of the excrement, as also of the feathers, used to promote parturition.

ORDER 2. PASSERES. (*Passer*, a Sparrow.)

This order is the most numerous of the whole class. The birds composing it have neither the violence of birds of prey, nor the fixed regimen of the gallinaceæ, nor of the water-birds; insects, fruit, and grain, constitute their food, which consists the more exclusively of grain, in proportion to the largeness of their beak, and of insects, as it is the more slender. Among them are found the singing birds, and the most complicated inferior larynx. The first division is founded on the feet; recourse is then had to the beak. The first and most numerous comprehends those genera in which the external toe is united to its fellow by one or two phalanges only; the second are called the syndactyles, in which the union extends to all but the last articulation. The first division contains the families Dentirostres, Fissirostres, Conirostres, and Tenuirostres, with their several genera and sub-genera; the second form but one family, containing six genera. The Dentirostres contains the various species of the genus *Lanius*, (Linn.); of the genus *Tanager*, (Linn.); of the genus *Turdus*, (Linn.); as the *Turdus merula*, or common blackbird; *Turdus musicus*, or common thrush; of the genus *Motacilla*, as the *Mot. rubicola*, or stonechat; *Mot. rubecula*, or red-breast; *Mot. luscinia*, or nightingale; also the wren, wagtail, &c. &c. Among the family of the *Fissirostres*, we have the swallow. Among the *Conirostres*, we have the skylark, house-sparrow, chaffinch, goldfinch, linnet, canary-bird, &c. &c.

ALAUDA ARVENSIS. *The Skylark.*

ALAUDA CRISTATA. *The Lark.*

Hab. England, France, Italy, and several other parts of the globe.

Food. Corn and worms.

Use. The *Alauda cristata*, eaten roasted or boiled, " helps the collic," according to Galen and Dioscorides. The heart applied to the thigh "helps the collic."

ALCEDO ISPIDA. (Linn.) *The Kingfisher.*

Hab. Almost everywhere by rivers and ditches.

Food. Fishes.

Use. Eating the flesh of this bird, or applying the eyes in a linen cloth to the head of those that sleep too much, was said to cause waking. "The heart dried and hung about the necks of children helpeth the falling sickness."

CORVUS CORNIX. (Linn.) *The Crow.*

Hab. Desolate, humid, and high places that are tilled.

Food. Corn, apples, cherries, and worms.

Use. "The eggs with myrtles make the hair black, as also the blood and brain with black wine." The brain, with vervain water, "helpeth the epilepsy." "The dung, with wool, helps the toothache. The eggs cause abortion."

FRINGILLA DOMESTICA. (Naum.) *The House Sparrow.*

Hab. Almost everywhere.

Food. Corn, seeds, flies, &c.

Use. The flesh was considered good against epilepsy, and also in renal calculi. The fat considered good against hard tumors. The dung was considered good against toothache.

HIRUNDO APUS	Linn.	*Common Swallow.*
HIRUNDO RIPARIA		*River Swallow.*
HIRUNDO RUSTICA		*Chimney Swallow.*
HIRUNDO URBICA		*Window Swallow.*

Hab. In all countries.

Food. Insects.

Use. The excrement of the swallow is found among the simples of the Lond. Pharm. 1618. Drunk in sheep's milk it was said to be good against quartan agues. The heart was said to help the memory and to sharpen the wit. The flesh often eaten was considered good against epilepsy. The stones in the ventricles of the swallow were used to expel things fallen into the eyes.

MOTACILLA LUSCINIA. (Linn.) *The Nightingale.*

Hab. In woods in almost all countries.

Food. Worms, ants, eggs, and bread.

Use. The gall of this bird with honey was said to clear the eyes. "The flesh eaten helps the cachexy."

STURNUS VULGARIS. (Linn.) *The Starling.*

Hab. Almost everywhere.

Food. Berries, grapes, &c.

Use. "The dung cosmetic—good in ringworm, being abstersive and drying." Flesh considered good after poison had been taken, but is injurious in hæmorrhoids, according to Arnold.

TURDUS MERULA. (Linn.) *The Black-bird.*

Hab. England, and, in fact, almost everywhere.
Food. Haws, sloes, misleberries, &c.
Use. The " flesh roasted, with myrtle-berries, helps the flux of the belly." *Aldrovand.*

ORDER 3. SCANSORES. *Climbers.*

This order includes those birds, whose external toe is directed backwards like the thumb, by which conformation they are the better enabled to support the weight of their bodies, and by which certain genera cling to and climb upon trees, whence the name *scansores*, or *climbers.* The *climbers* usually nestle in the hollow of old trees; their food, like that of the passeres, consists of insects or fruit, in proportion as their beak is more or less stout. This order is distributed into thirteen genera, and the latter into sub-genera and species. Among the species we find the jackamar, the wood-pecker, the various species of the cuckoo, the cockatoo, parrot, &c.

CUCULUS CANORUS. (Linn.) *The Cuckoo.*
Hab. Almost everywhere.
Food. Flesh, flies, eggs, fruit, &c.
Use. A decoction of the dung drunk was considered good against the biting of a mad dog. The " ashes help the pain and moisture of the stomach, as also the stone :" " good also in epilepsy."

ORDER 4. GALLINACEÆ. *Gallinæ, Linn.* (*Gallus,* a Cock.)

These birds have been so called from their affinity to the domestic cock; and like it, they generally have the upper mandible arched. Most of our barn-door fowls, and many excellent game birds, are to be found in this order. It is composed in a great measure of one natural family, and is divided into genera, sub-genera, and species.

COLUMBA MIGRATORIA. (Lath.) *Passenger Pigeon. Carolina Pigeon.*
Descript. Body ash-coloured; nape golden purplish green; wing-coverts with oval spots; chest rufous; belly white. Female grey-brown; beneath whitish; chest yellowish-white.
Hab. North America.
Use. Yields an oil.

COLUMBA PALUMBUS. (Linn.) *The Ring-dove.*
Hab. In almost all countries and places.
Food. Corn and other seeds.
Use. The flesh of the pigeon was recommended to persons in a languishing condition. When frequently eaten, it was said

to prevent plague; good in epileptic and paralytic cases. The brain and testicles said to occasion venery.

NUMIDA MELEAGRIS. (Linn.) *The Turkey.*

Hab. Most parts of the globe.

Food. Grain and the like.

Use. Flesh very delicate and nutritious. The rough inner skin of the gizzard, salted and dried, used to curdle milk.

PAVO CRISTATUS. (Linn.) *The Peacock.*

Hab. Various parts of the world.

Food. Barley, herbs, and serpents.

Use. The broth, if fat, recommended in pleurisy; the excrement recommended for the eyes, as also in gout.

PHASIANUS GALLUS. (Linn.) *The Domestic Cock.*

Hab. In almost all countries.

Food. Corn, seeds, flies, and snails.

Use. The flesh, when young, is easily concocted; was considered beneficial in consumptions and hectic fevers. The flesh of capons seven or eight months old was much esteemed by the old physicians for its nutritious properties. The white dung was considered beneficial in colic. "The dry comb of a hen stops the involuntary discharge of urine."

PHASIANUS COLCHICUS. (Linn.) *The Pheasant.*

Hab. England, France, and other countries.

Food. Corn, seeds, and berries.

Use. The flesh was recommended in phthisis. The gall was said to sharpen the sight. The fat recommended in affections of the kidneys.

TETRAO COTURNIX. (Linn.) *The Common Quail.*

Descript. Back brown, undulated with black; a pointed white stripe on each feather; throat brown; eyebrows whitish. Celebrated for its migrations. The bird, heavy as it is, finds means to traverse the Mediterranean.

Imported from Turkey, preserved in oil; and from Cagliari, potted with clarified butter.

TETRAO CINEREUS. (Linn.) PERDIX. (Briss.) *The Partridge.*

Hab. Almost everywhere.

Food. Corn, chickweed, snails, and ants.

Use. The liver, dried and drunk, was given in epilepsy. They are said to be very libidinous.

ORDER 5. GRALLÆ. (Linn.) *Waders.*

The birds of this order derive their name from their habits, and from the conformation which causes them. They are generally long-legged wading birds, generally living in the vicinity of water, except the ostrich and cassowary, which did not originally belong to this order, as established by Linnæus. Those which have a strong bill feed on fish and reptiles, while such as have a weak one consume worms and insects. The external toe is most commonly united at its base with that of the middle one by means of a short membrane. Cuvier has divided the order into five families.

ARDEA CICONIA. (Linn.) *The Stork.*

Hab. Egypt, Ethiopia, and other places.

Food. Frogs, snakes, and fishes.

Use. The flesh was said to prevent lippitude. The ashes of the young ones were deemed good for spots in the eyes. The oil good for palsy. The gall was recommended for clearing the sight. The excrement drunk in water of use in epilepsy.

ARDEA CINEREA. (Linn.) *The Heron.*

Hab. England, France, and several other countries.

Food. Fishes, oysters, &c.

Use. The bill was supposed to possess a hypnotic effect. The flesh considered bad for those with hemorrhoids. The fat recommended as relieving the pain of gout.

FULICA CHLOROPUS. (Linn.) *The Moor-hen. Coot.*

Hab. Fenny and watery places.

Food. Herbs, seeds, and the like.

Use. The heart was recommended in epilepsy. The flesh was deemed good for the bitings of spiders.

GRUS CINEREA. (Bechst.) *The Crane.*

Hab. Lybia, Egypt, and Ethiopia.

Food. Fruits and herbs.

Use. The eggs were supposed good against a variety of diseases, as cancers, palsy, and as a defence against venomous creatures. The powder of the head and eyes good in fistulas and all sorts of ulcers.

STRUTHIO CAMELUS. (Linn.) *The Ostrich.*

Hab, Africa, Lybia, Ethiopia, Arabia, &c.

Food. Almost anything.

Use. The flesh has a very strengthening effect on the system. The fat useful to allay the pain of gout, as also the eggs. The feathers, which are used as articles of dress, are preserved by dipping them in weak lime-water, and then drying and stoving them. They are brought from Africa.

ORDER 6. PALMIPEDES. *Web-footed Birds.*

This order contains generally such birds as are web-footed, and fitted for an aquatic life. It is divided into four natural families:—1. The *Brachyptera,* or divers. 2. The *Longipennes,* or high-flying birds. 3. The *Totipalmes*, in which the thumb, as well as the other toes, is included in the common web, or membrane of the foot: and 4. The *Lamellerostres*, having the bill furnished with rows of laminæ, resembling fine teeth.

ANAS CYANOIDES. (Linn.) *The Duck.*

Hab. Watery and fenny places.

Food. Roots and seeds of aquatic plants.

Use. The liver was recommended in fluxes occasioned by liver disease. The excrement applied was said to be good for venomous bitings. The womb is recommended in the *Antidotus Ecloge* of Myropsus, against the cœliac passion and spitting of blood.

ALCA IMPENNIS. (Linn.) *The Great Penguin.* The *Razor-bill* of the English.

Descript. About the size of a goose, which bird it somewhat resembles in some respects. It stands with its head and body vertical; has a black compressed beak, with eight or ten furrows in it. The colour of the back is black; that of the breast, belly, and sides white, or partly grey. There is an oval white mark between the beak and the eye. The wings are undeveloped, constituting what are called flippers. It is said to lay but one large egg, which is marked with purple blotches. When young, the beak is smooth, and there is no white frontal spot.

Hab. The Arctic seas of both continents.

ALCA TORDA, ET PICA. (Gm.) *The Common Penguin.*

Descript. This bird has some resemblance to the duck, being smaller than the preceding species. The colours resemble those of the great penguin, but there is a white mark on the flippers, and one or two on the beak. This, as well as the preceding species, is web-footed.

The penguin of a small species, about fourteen inches in height, is found in the Sandwich Islands. On the coast of Chili, a large species, twenty-four or twenty-five inches high, is usually met with. The same bird, with a little variation of colour, is found at Cape Horn in immense numbers on the rocks and islands, especially on Penguin Island; also on the islands on the east coast of South America, the Falkland Islands, Tristan D'Acunha, and the islands and rocks along the African coast. These birds cannot fly, having no wings adapted for such purpose. They are frequently seen on the water in groups of six or eight, and are excellent divers. They breed on rocks and islets, where they congregate in vast numbers, and where their excrements accumulate in immense quantities, and constitute the chief part of the substance called *Guano*, which is now so extensively employed in agriculture.

Anas olor. (Gm.) *The Swan.*

Hab. Almost everywhere; it is amphibious.

Food. Grass, grain, and fish spawn.

Use. The fat was considered good for the nerves. The eggs were thought useful in erysipelas. The skin dressed with the down, and applied to the breast, was said to assist concoction.

Anser anser. (Linn.) *The Goose.*

Hab. Almost everywhere.

Food. Grain, grass, and the like.

Use. The flesh, eaten, was said to cause length of life, as also the fat. It was said to cure hydrophobia, and to excite venery. *Goose-grease*, with honey, was supposed good against the bitings of a mad dog. The large feathers of the wings, *quills*, prepared by dipping into lime water, hardening by the fire, and the barrels coloured with dilute nitric acid, used for making pens.

Pelecanus acquilus. (Linn.) *The Frigat.*

Hab. They were formerly to be found in great numbers in the island of Gaudaloupe.

Food. Small fish.

Use. The oil or fat of this bird was once considered a sovereign remedy for sciatica pains.

Pelecanus carbo. (Linn.) *The Cormorant.*

Hab. Seas, rivers, fens, and such places.

Food. Eels and congers.

Use. The flesh, roasted and eaten, useful in elephantiasis and in the spleen. The blood was considered alexepharmick. The heart was thought good against quartans. "The old liver, drunk with hydromel, bringeth out the secundine. The gall, with rosin of cedar, hinders the growth of hair on the eyelids after evulsion."

CLASS III. REPTILIA. *Reptiles.* (*Repo*, to crawl.)

The structure of the heart in *Reptiles* is such, that at each contraction a portion only of the blood it has received from the different parts of the body is transmitted to the lungs, the remainder returning to those parts without being passed through the pulmonary organs, and without having respired. The result of this arrangement is, that the oxygen acts less upon the blood than in the mammalia. As it is from respiration that the blood derives its heat, and the fibre its susceptibility of nervous irritation, the blood of reptiles is cold, and the muscular energy less than that of quadrupeds, and much less than of birds; thus we find their movements confined usually to crawling and swimming. In cold or temperate climates almost all of them pass the winter in a state of torpor. The smallness of the pulmonary vessels permits reptiles to suspend the process of respiration without arresting the course of the blood. No reptile hatches its eggs. The young batrachians, on quitting the egg, have the form and branchiæ of fishes, and some of the genera preserve these organs, even after the lungs have become developed.

Reptiles are divided into four sufficiently natural orders, the Chelonian, Saurian, Ophidian, and Batrachian, severally represented by the tortoise, the lizard, the serpent, and the frog. The last of these is remarkable for presenting in early life a structure different from that which it is to assume when adult; thus the young tadpole, it is well known, breathes by gills, and in some genera of this order the gills are never lost. An easy transition is thus formed from the class reptiles to the fishes.

ORDER 1. CHELONIA.

TESTUDO EUROPÆA. (Schn.) *T. orbicularis.* (Linn.) *The fresh-water European Tortoise, or Spotted Tortoise*

Hab., &c. The southern and eastern parts of Europe. Its carapace is oval, but little convex, rather smooth, blackish, and marked with yellowish points. It scarcely attains ten inches in length. It is brought up on bread, herbs, insects, small fishes, &c.

Use. This is sometimes employed in Paris to make soups, and a certain kind of syrup.

TESTUDO GRÆCA. (Linn.) *The Land Tortoise, or Common Tortoise.*

Hab., &c. Greece, Italy, Sardinia, and in fact all around the Mediterranean. It is distinguished by its carapace, which bulges out equally; by its elevated scales, granulated in the centre, streaked at the edge, and marked with black and yellow spots. It scarcely attains a foot in length; and feeds on leaves, fruits, insects, worms.

TESTUDO IMBRICATA. (Linn.) The *Caret* of the French.

This is not so large as the *T. mydas;* its muzzle is more elongated; its jaws are indented; it bears thirteen yellow and brown scales, which lie one upon the other like tiles; the flesh is disagreeable and unwholesome, but its eggs are a great delicacy; this it is which yields the most beautiful tortoise-shell for use in the arts.

Testudo mydas. (Linn.) *T. viridis.* (Schn.) *The Green Tortoise, or Green Turtle.*

This is distinguished by its greenish scales, to the number of thirteen, which, however, are not imbricated, those of the middle row being nearly regular hexagons. It is from six to seven feet in length, and from seven to eight hundred pounds in weight. Its flesh affords a pleasing and wholesome food for navigators sailing on the torrid zone. Its eggs are also much prized, but no use is made of its shell.

Order 2. SAURIA. (Σαυρος, Lizard.)

Ess. Char. Heart like that of the Chelonians; ribs moveable; mouth armed with teeth, and toes, with few exceptions, furnished with nails; skin covered with scales, or scaly granules; tail more or less long; most of them have four legs.

This order has been divided into six families, represented severally by the Crocodiles, Monitors, Iguanas, Geckos, Cameleons, and Skinks. Of these families the first and fifth have each only one genus, the second two, and the others have several genera.

Draco. (Linn.) *The Dragon.*

The dragon is distinguished from all the other Saurian reptiles by reason of the first six false ribs instead of turning round the abdomen, being extended in a right line, and sustaining a production of the skin, which forms a species of wing somewhat resembling that of the bat, but independent of the four feet; it sustains the animal like a parachute in its leaping from branch to branch, but it is incapable of enabling the animal to fly. All the known species come from the East Indies.

Lacerta agilis. (Linn.) *The Lizard.*

There are very many species of the Lacerta which have been confounded by Linnæus under the name of *Lacerta agilis.* The most striking of these are the

Lacerta ocellata. (Daud.)

Lacerta viridis. (Daud.) *The Green Lizard.*

Hab,, &c. France, Spain, Italy, &c. &c.

Use. This Saurian reptile has been extolled as a sudorific in syphilitic diseases, when eaten raw.

Scincoidii.

These constitute the sixth and last family of the Saurian reptiles. They are characterised by short feet, tongue not extensible, and by the equal scales which cover the body and tail, like tiles.

Lacerta scincus. (Linn.) *Scincus Officinalis.* (Schn.) *The Scinc, or Skink.*

From six to eight inches long; tail shorter than the body; feet short; body yellowish, and traversed with blackish bands, covered with shining scales.

Hab. Egypt, Nubia, Arabia, Abyssinia, &c.

Use. In order to preserve this animal, the intestines were drawn out, and their place supplied by aromatic plants; the body was then dried, and wrapt up in dried wormwood leaves. It was considered aphrodisiac; it formed a constituent in the Electuarium Mithridatis.

Iguana delicatissima. (Linn.) *Ig. nudicollis.* (Cuv.)

Hab. The Brazils, Guadaloupe.

Use. This was considered a valuable sudorific, when eaten raw, in syphilitic diseases. The flesh is an agreeable food; preserved by salting.

Order 3. OPHIDIA. (ὄφις, a serpent.) *Ophidian Reptiles.*

Serpents are reptiles without feet. Their very elongated body moves by means of the folds it forms when in contact with the ground. This order is principally divided into three families: 1. The snakes, (*Anguis;*) 2. The true serpents; and 3. The naked serpents. Of these the 1st and 3rd contain each but one genus; the 2nd contains all the rest, and as these differ in several respects, is subdivided, 1st, into two tribes, the *double-marcheurs*, that is, those that move with either end foremost; and the serpents proper, which always advance with the head in front. The serpents proper are then divided according as they are non-venomous, or venomous; and afterwards these latter, according as they have isolated fangs, or fangs accompanied by the ordinary jaw teeth. Finally comes the division into genera, subgenera, and species. Among the Anguis, or 1st family, we find the species *Lacerta apoda*, Pall. *Ang. ventralis*, L., glass serpent. *A. fragilis*, L., common blind worm. *A meleagris*, L., javelin snake, or Cape Pintado snake. Among the serpents, or 2nd family, we have the *Amphisbœna alba*, Lacep. *Anguis scytale*, L., whip-lash snake (σκυταλη, a whip). *Uropeltis ceylanicus*, Cuv. *Boa Constrictor*, L. *Coluber Javanicus*, Sh. Great adder of the Sunda Isles. *Crotalus horridus*, L., American rattlesnake. Then the various subgenera and species of the *Vipera*, Daud., as *Col. berus*, L., the common viper. The 3rd and last family, or *Naked serpents*, consist of but one very singular genus, the *Cœcilia* of Linnæus. Species, *Cœc. annulata*, annulated cæcilia.

ANGUIS FRAGILIS. (Linn.) *Blind-worm.*

Hab. Very common in all parts of Europe.

Food. Worms and insects.

They bring forth their young alive.

ANGUIS MELEAGRIS. (Linn.) *Javelin Snake*, or *Cape Pintado Snake.*

Hab. The Cape of Good Hope.

ANGUIS SCYTALE. (Linn.) *The Whip-lash Snake.*

Description. About two feet long, marked with irregular black and white bands.

Hab. America.

ANGUIS VENTRALIS. (Linn.) *The Glass Serpent.*

Description. Colour, yellow green, with black marks above; the tail is longer than the body; it is so easily broken as to have received from this circumstance the name of *glass serpent.*

Hab. The southern states of North America.

Use. Many virtues were formerly ascribed to the liver, fat, and other parts of various species of *Anguis.* The liver was said to be good for stone in the bladder.

BOA.

The boas, properly so called, have a hook on each side of the anus, a compressed body, thickest in the middle, a prehensile tail, and small scales on the head, at least on its posterior portion. In this genus the largest of all serpents are found; some species attain the length of thirty or forty feet. A subdivision of the boas has been made, founded on differences in the integuments of the head and jaws, as follows.

1. Head covered to the end of the muzzle with small scales, like those of the body. The plates, with which the jaws are provided, not dimpled. Under this head comes the *Boa Constrictor*, L.

BOA CONSTRICTOR. (Linn.) *Boa empereur.* (Daudin.) *The Devin.*

Description. Known by a broad chain extending along the back, formed alternately by large, blackish, irregularly hexagonal spots, and by pale oval ones, the two ends of which are notched or jagged, forming a very elegant pattern.

Hab. The New World.

Food. Animals of all kinds.

2. Scaly plates from the eyes to the end of the muzzle. No dimples on the jaws. Examples. *Boa scytale*, and *Boa murina.* (Linn.) *Boa aquatica* of Prince Maximilian.

BOA SCYTALE. (Linn.) *Boa murina.* (Linn.)

Description. Brown: a double suite of round black spots along the back: ocellated spots on the flanks.

Hab. South America.

Food. Chiefly mice; whence the name *Murina.*

3. Scaly plates on the muzzle, and dimples upon the plates at the sides of the jaw. Ex. *Boa cenchria.* (Linn.) *Boa centhris.* (Gmel.)

Boa cenchria. (Linn.)

Description. Yellowish, with a row of large brown rings running the whole length of the back, and variable spots on the sides. These are generally dark, containing often a whitish semilunar mark.

Hab. South America; the marshy places of the warm parts.

Food. The various quadrupeds which come to drink.

4. Plates upon the muzzle and sides of the jaw hollowed into a kind of slit under the eye, and beyond it. Example, *Boa canina.* (Linn.)

Boa canina. (Linn.)

Description. Greenish, with white irregular longish spots, somewhat annularly disposed.

Use. The excrement of the Boas, usually the *Boa constrictor*, is the source from which uric acid is most abundantly and economically procured.

Coluber æsculapii. (Sh.)

Description. Brown superiorly; straw-coloured inferiorly and on the flanks; scales of the back almost smooth. It is this which the ancients have represented in their statues of Esculapius, and it is probable that the Epidaurian serpent belonged to this species.

Hab. Italy, Hungary, Illyria, &c. &c.

The *Coluber esculapii* of Linnæus is a different species.

Coluber berus. (Linn.) Vipera berus. (Daud.) *The Common Viper.*

Hab. Arabia, Africa, and Europe.

Food. Herbs, horseflies, cantharides, &c.

Use. According to Culpeper, 'The flesh of vipers being eaten clears the sight and helps the vices of the nerves.' According to the same author, the head of the viper, which gave the bite, is the best remedy.

Crotalus horridus. (Linn.) *The American Rattle-snake.*

This is a species of the genus Crotalus. (Linn.)

The Crotali are distinguished from all other serpents by the fatal subtlety of their poison. Like the *Boa,* they have simple transverse plates under the body and tail. But, what best distinguishes them, is the noisy instrument which they carry under the tail, and which is formed of many scaly cornets, embossed loosely in each other, which move and resound when the animal moves his tail. The number of these cornets increases with age, and there remains an additional one at each moulting. The muzzle of these serpents is hollowed, with a small round fosset behind each nostril. All the species, whose country is well known, come from America. They are more dangerous in proportion to the heat of the climate or season. Their natural disposition, however, is tranquil and rather lethargic.

Food, &c. Birds, squirrels, &c. It was once believed that it had the power of torpifying them by its breath, and even of fascinating, that is, of forcing them by its glance alone to precipitate themselves into its mouth. It appears, however, that it is able to seize them only during those irregular movements which the fear of its aspect causes them to make.

ORDER 4. BATRACHIA. (βατραχος, a frog.)

Ess. char. Heart consisting of one auricle and one ventricle; two equal lungs, to which at first are added branchiæ. Most of them lose their branchiæ, and the apparatus which supports them, when they attain maturity. The envelope of the ova is membranous. The eggs become much enlarged in the water. The young differ from the adult not only in the presence of branchiæ, but in having feet which are developed by degrees. Some species are biviparous.

This order has been divided by Gray into two very natural orders or families, according as they do or do not undergo metamorphosis. Cuvier has adopted the same division, and then subdivides. The first genus is the

RANA, (Linn.) of which there are several subgenera.

Ess. char. Front legs in the perfect state, but no tail; head flat, muzzle rounded; tongue generally soft, not attached to the bottom of the gullet, but to the edge of the jaw, and folds inwards: four toes to anterior feet; the hind ones usually exhibit the rudiment of a sixth; no ribs to skeleton. Inspiration effected by muscles of the throat, which, by dilating, receives air from the nostrils; expiration, on the contrary, effected by the muscles of the abdomen. The principal species of this genus are *Rana temporaria*, L., common frog. *R. arborea*, L., tree-frog. *R. bufo*, L., common toad. *R. papa*, L., Surinam toad. The second genus, is the *Salamandra*, Brongn. The principal species, are the *Lacerta salamandra*, L., common salamander *Salam. marmorata*, L., marbled salamander.

RANA BUFO. (Linn.) *The Common Toad.*

Description. Reddish or brown gray; sometimes rather olive and blackish; back covered with many rounded tubercles as large as lentiles. Hind feet semi-palmate.

Hab. It remains in obscure and sheltered places, and passes the winter in holes which it excavates. Coupling takes place in the winter, and in March and April. The common toad lives more than fifteen years, and produces at four years of age.

Rana esculenta. (Linn.) *The Green Frog. Gibbous Frog.*

Description. Of a fine green, spotted with black. Three yellow stripes on the back, the belly yellowish. Four legs and no tail, in the perfect state. The tongue, which is soft, is attached, not to the lower part of the throat, but to the edge of the jaw, and is folded inwards.

Hab. This is the species so common in all stagnant waters, and in grassy places near rivers, and which is so troublesome in summer, from the continuity of its nocturnal clamours.

Use. It furnishes a wholesome and agreeable aliment. It spreads its eggs in clusters in the marshes. The liver of the frog was among the simples of the Lond. Pharm., 1618. It was considered beneficial, when dried, in quartan agues.

Rana paradoxa. (Linn.) *The Paradoxical Frog.*

Of all the species of this genus this is that whose tadpole grows the most. The loss of an enormous tail, and of the envelopes of the body, cause even the adult animal to be smaller in size than the tadpole; so that the earliest observers believed that it was the frog which was metamorphosed into a tadpole, or as they said, into a fish.

Char. Greenish, spotted with brown, and particularly recognised by irregular brown lines along its thighs and legs.

Hab. Guiana.

Use. Flesh used as food.

Rana tinctoria. (Linn.) *Hyla T. The Stained Tree Frog.*

A very remarkable species of the genus *Hyla*, or *Tree Frog.* It is said that if some of the feathers of a parrot be plucked out, and the skin be imbued with the blood of this animal, it causes a reproduction of red or yellow feathers, and forms that peculiar appearance which is termed by the French *Tapire.** It is a brown species, with two whitish bands transversely united in two places (Daud. pl. viii.); the toes of the hind feet are almost free.

Salamandra maculosa. (Laur.) *Lacerta salamandra.* (Linn.) *The Common Salamander.*

Description. Black, with great spots of a lively yellow; on its sides are ranges of tubercles, from which, in times of danger, oozes a bitter milky fluid, of a powerful odour, and poisonous to weak animals. This probably has given rise to the fable that the salamander can resist the flames. In consequence of the length of the body and tail, which assimilates it to the Lizard, this animal was placed by Linnæus among the Lacertæ.

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* And hence its French name *Rainette a tapirer.*

Hab. In the Alps, Germany, &c.; in cold moist places.

Food. Worms, insects, humus, and according to some, milk, honey, &c.

Use. According to Avicenna, the powder is a good application for corns, and is septic.

CLASS IV. PISCES. FISHES.

The class of fishes is composed of Oviporous Vertebrata, with a double circulation, but in which respiration is altogether effected through the medium of water. For this purpose they have, on each side of the neck, an apparatus called branchiæ or gills, which consist of laminæ suspended on arches that are attached to the hyoid bone, each composed of numerous separate laminæ, and covered with a tissue of innumerable blood-vessels. The water which the fish swallows escapes between these laminæ through the branchial openings, and by means of the air it contains acts on the blood that is continually arriving in the branchiæ from the heart, which only represents the right auricle and ventricle of warm-blooded animals. This blood, having received the benefit of respiration, is poured into an arterial trunk under the spine, which, exercising the functions of a left ventricle, distributes it to every part of the body, whence it returns to the heart by the veins. In several species, immediately under the spine, there is a bladder filled with air, which, by compression or dilatation, varies the specific gravity of the fish, and assists it to rise or descend. Progression is effected by the motion of the tail, which by striking the water alternately right and left, forces them forward; the branchiæ, by impelling the water backwards, may also contribute to this effect. The fins, which correspond to the anterior extremities, are termed *pectorals*, those answering to the posterior, *ventrals*. Fishes are divided into two distinct series, the OSSEI and CHONDROPTERYGII; in the former the skeleton is formed of true bone, while in the latter it always remains in the state of cartilage or gristle (χονδρος, cartilage, and πτερυξ, a fin). The former (Ossei) is vided into six, the latter into two orders; the principal characters being derived from the first gills, as is evident from the mes of the orders.

	Series.	Order.
ishes.	I. Ossei (bony fishes.)	1. Acanthopterygii. 2. Malacopterygii Abdominales. 3. Malacopterygii Subbrachii. 4. Malacopterygii Apodes. 5. Lophobranchii. 6. Plectognathi.
	II. Chondropterygii (cartilaginous fishes).	7. Eleutherobranchii (gills free; ελευθερος, free). 8. Pectobranchii (gills confined or fixed; πηκτος, fixed.)

1st Series of Fishes. OSSEI.

Order. 1. ACANTHOPTERYGII.

(Spiny finned; ακανθος, a spine.)

Ess. char. Spines occupying the first rays of their dorsal, or which alone support the first fin of their back, when there are two; sometimes, instead of a first dorsal, there are only a few free spines. The first rays of their anal are spines, and there is generally one to each ventral.

The Acanthopterygians make three-fourths of all the fishes known. The families into which they are divided are in general very natural, but present so many varieties with respect to their characters, on which it might be supposed they could be grouped into orders or other subdivisions, that it has been found expedient to leave them all together. There are fifteen families of the Acanthopterygians.

Cottus scorpius. (Linn.) *The Father Lasher.*

Hab. On our sea coast.

Use. Pressed for oil.

Gasterosteus aculeatus. (Linn.) *The Stickleback.*

This extremely small fish is in some places so plentiful as to be pressed for its oil; the mark being used as manure.

Mullus barbatas. *The Mullet.*

Hab. In the Northern Ocean, and in the Mediterranean.

Food. Almost anything.

Use. Difficult of digestion, but nutritious. "Good in colic from cold, and pituitous humours. *Applied* fresh, they help the bitings of the sea-dragons, scorpions, and spiders."

SCOMBER SCOMBRUS. (Linn.) *The Mackrel.*

Hab. The Ocean and Mediterranean.

Food. They feed near sandy shores.

Use. Supposed good for those labouring under hepatic diseases.

SCOMBER THYNNUS. (Linn.) *The Tunny.*

Hab. The Mediterranean sea.

Imported from Italy; preserved in oil, or salted.

SPARUS AURATA. (Linn.) *Lunulated Gilt Head.*

A beautiful fish, called by the ancients *Chrysophris*, (golden eye-brow,) from a golden-coloured band passing from one eye to the other. The flesh is salted.

SPARUS PAGRUS. (Linn.)

Hab. The Indian seas, and the shores of the United States. The flesh said to be poisonous, and used for suicide. (Gray.)

ORDER 2. MALACOPTERYGII ABDOMINALES.

(Soft-finned; μαλακος, soft.)

Char. Ventral fins behind the pectorals; rays soft or articulated.

There are five families of this order. The first of these is the Cyprinoides, or the carp family; this includes the following species among others, the carp, the barbel, the gudgeon, the tench, the bream, the roach. The second family, or the ESOCES, contains the species of pike. The fourth family, or salmons, contains the *Salmon, properly so called*, or the *Trout*. The fifth family, called CLUPES, comprehends the herring, shad, sprat, the Clupea encrasicholus, (Linn.) or Anchovy.

CLUPEA ENCRASICHOLUS. (Linn.) *The Anchovy,*

A little sea-fish, as thick and as big as one's finger, having a thick head. The little anchovies are valued more than the larger ones. The anchovies are taken in several parts, as in the river of Genoa, in Catalonia, at Nice, Antibes, St. Tropez, and other places in Provence. They are generally taken in the night, always in May, June, and July, when they come from the great ocean into the Mediterranean, to go to the Levant.

Use. Aperitive and stimulating to the stomach. *Pomet.*

CLUPEA HARENGUS. (Linn.) *The Herring.*

Hab. In the Baltic.

Food. According to some only water.

Use. When *salted*, they are said to promote the secretion of urine. The *pickle* was used in clysters, in pains of the hips, and dropsy.

Clupea catulus, white bite. *Clupea pilchardus*, pilchard.

CLUPEA SPRATTUS. (Linn.) *The Sprat.*

Hab. Abundant on our coasts.

Use. A cheap article of diet among the poor. The whole fish, not gutted, is preserved in brine. Gutted, headed, and pickled in vinegar, it is used for *anchovies*.

CYPRYNUS ALBURNUS. (Linn.) *The Bleak, or Bley.*

Hab. Throughout Europe.

Use. Said to furnish false pearls. The scales used to make oriental essence. (Cuvier and Gray.)

CYPRINUS BRAMA. (Linn.) ABRAMIS. (Cuv.) *The Bream.*

Hab. Clayey rivers and pools.

Food. Mud and herbs.

Use. The *Cud-bream*, or *Scarus ruminans*, is the best and lightest fish of the river, fit for sick and weak persons.

CYPRINUS CARPIS. (Linn.) *The Common Carp.*

Hab. Rivers, ponds, and lakes. It was introduced into England in 1574, by Leonard Maschall.

Food. Larvæ of insects, worms, roots, and young sprouts of plants.

Use. "The spawn serveth to make red caviare of." The fat was considered aphrodisiac. The gall was supposed good in dimness of sight. Some medical men have ascribed to this fish, when eaten in excess, the property of inducing fits of gout.

CYPRINUS GOBEO. (Linn.) *Gobius Vulgaris.* (N.) *The Gudgeon.*

Hab. Almost everywhere; in England, &c.

Food. Worms, grubbs, and the fry of other fishes.

Use. The *white* was considered better than the *black*. When roasted, "they help dysenteries." According to Dioscorides, "they help the bitings of mad dogs."

CYPRINUS LEUCISCUS. (Blaine.) *The Dace.*

Hab. The Rhine.

Use. Scales used to make oriental essence.

CYPRINUS RUTILUS. (Linn.) *The Roach.*

Hab. Almost in all rivers, and in streams.

Food. Worms of various kinds, &c.

Use. This was considered a very healthful fish, whence the proverb, "as sound as a roach." The flesh was considered light, sound, and wholesome.

CYPRINUS TINCA. (Linn.) *The Tench.*

Hab. Standing waters among reeds.

Food. Mud.

Use. "Laid to the soles of the feet, they often draw away the ague." The old physicians used them to ease pains of the head and limbs.

Esox Lucius. (Linn.) *The Pike.*

Hab. Rivers and pools, almost everywhere.

Food. Fishes and frogs, &c.

Use. "The ashes of the jaws helpeth the stone. Drunk in wine will act as a diuretic. The powder of the teeth considered good in leucorrhœa. The gall cures the ague." The fat (to be found among the simples in the Lond. Pharm. 1618) was considered to act beneficially as a revellent in catarrhs, when rubbed to the soles of the feet and breasts of infants.

Salmo alpinus. (Linn.) *The Trout of the Alps.*

Hab. It inhabits the lakes of Lapland.

Use. It is a valuable source of food to the Laplanders in the summer. The flesh preserved by potting, is called *Potted Char.*

Salmo salar. (Linn.) *The Salmon.*

Hab. The northern seas, from which it enters our rivers, in large shoals, in the spring.

Food. Little fishes.

Use. This is too well known to require description.

Silurus glanis. (Linn.) *The Shad.*

Descript. The largest of the fresh water fish of Europe, being sometimes six feet or more in length, and weighing three hundred pounds.

Hab. It is found in the rivers of Germany, Hungary, Russia, &c., and in the lake of Harlem. This or other species of the same genus are met with in the Nile, the Danube, the Orontes, and some of the rivers of Asia Minor.

Use. It contains a large quantity of fat, which has been used in place of lard. It yields isinglass,—the kind known in commerce as the *Samovey isinglass*, is said to be obtained from it by the Russians.

Order 3. MALACOPTERYGII SUB-BRACHII.

Char. Ventrals inserted under the pectorals; the pelvis directly suspended to the bones of the shoulder; it contains almost as many families as genera. The first family or *Gadoides*, i.e. the *Cod family*, contains the cod, whiting, hake, ling, &c.; the second family, the *Plani*, or flat-fish, contains the flounder, halibut, brill, &c. &c.

Gadus œglefinus. (Linn.) *The Haddock.*

Hab. Northern seas.

Use. The flesh is split and dried.

GADUS BROSME. (Gm.) *The Forsk.* (One fin on the back.)

Hab. Does not come down lower than the Orkneys.

Use. This fish is salted and dried; when merely split and dried, it goes by the name of *stock-fish.*

GADUS MERLANGUS. (Linn.) *The Common Whiting.*

Hab. Along the shores of the ocean. Very abundant.

Use. Esteemed as a light food, and easy of digestion.

GADUS MOLUA. (Linn.) *The Ling.*

Hab. Northern seas.

Use. A common article of food among the poor.

GADUS MORRHUA. (Linn.) *The Cod.*

Hab. The seas of the northern hemisphere, from the 40° to the 75°.

Food. Sand-eels, plaice, &c.

Use. The flesh used as food. The oil obtained from the liver has been administered with advantage in rheumatic and scrofulous affections.

ORDER 4. MALACOPTERYGII APODES.

These constitute one natural family, viz. the *Anguilliformes,* (*anguilla,* eel, and *forma,* form,) or the various species of the eel.

GYMNOTUS ELECTRICUS. (Linn.) *The Electric Eel.*

So called from its resemblance to an eel, and the electric power it possesses.

Descript. About five or six feet in length; the head rather broad and depressed; the muzzle obtuse; the body, compared with that of the common eel, stunted and shorter in proportion; the anterior part nearly cylindrical; the pectoral fins small and rounded; colour brownish black.

Hab. The rivers of South America.

Use, &c. This eel is said to communicate shocks so violent that men and even horses are overpowered by them. This power is dependent on the will of the animal, but decreases, if frequently repeated, unless at considerable intervals.

MURÆNA ANGUILLA. (Linn.) *The Eel.*

Hab. Almost everywhere.

Food. Frogs, worms, fishes, roots, herbs, &c.

Use. Laxative. Are not considered wholesome, "The fat is considered good against stripes." It is among the simples of the Lond. Pharm. 1618.

MURÆNA CONGER. (Linn.) *The Conger Eel.*

Hab. It is found in all our seas.

Use. It is not much esteemed at table when fresh; the flesh is salted, and the fat which runs out is collected.

ORDER 5. LOPHOBRANCHII. (Tufted gills, λοφος, a tuft.)

Char. Gills in tufts; operculum fixed by a membrane which only affords a small aperture for the escape of the water.

There are two genera, Scil. *Syngnathus*, (Linn.) or See Eels; and *Pegasus* (Linn.)

ORDER 6. PLECTOGNATHI. (Cheeks united by suture, πλεκω, to weave, and γναθος, cheek.)

Char. Maxillary fixed to the intermaxillary bones, and the palatal to the cranial. Opercula covered in.

This order comprises two very natural families, characterised by their mode of dentition. 1st. The *Gymnodentes* (naked teeth, γυμνος, naked, and οδους, tooth.) 2nd. *Sclerodermata* (rough-skinned, σκληρος, hard, and δερμα, skin.)

DIODON ATINGA. (Bl.)

Use. Sounds are made into isinglass; gall poisonous.

TETRAODON LINEATUS. (Linn.)

Hab. The Nile.

Use. The flesh is said to be poisonous. Some species of the Tetraodon are said to be electrical.

2nd SERIES OF FISHES. CHONDROPTERYGII.

This series is divided into *Eleutherobranchii*, whose branchiæ are free, (ελευθερος, free,) and the *Pectobranchii*, those whose branchiæ are fixed, (πηκτος, fixed.) To the former belong the following species: Scil. the *Acipenser Sturio*, L., or common sturgeon; the *Chimæra Monstrosa*, L., king of the herrings, &c. To the latter belong the several species of shark, the saw-fish, the torpedo, the lamprey.

ORDER 7. ELEUTHEROBRANCHII. (*Free Branchiæ.*)

ACIPENSER.* (Linn.) *The Sturgeons.*

Gen. char. Body furnished with osseous bucklers implanted on the skin in longitudinal ranges. Their head cuirassed in the same manner externally; their mouth, placed under the muzzle, is small and devoid of teeth; the palatine bone is cemented to the maxillaries, and we find the intermaxillaries in the rudimentary state, in the thickness of the lips; supported on a pedicle with three articulations, the mouth is more protracted than that of the squali; their eyes and nostrils are at the sides of the head; some barbels depend from the muzzle. The labyrinth is entire in the bone of the cranium; but there is no vestige of an external ear. The dorsal is behind the ventrals, and the anal is under it. The caudal surrounds the extremity of the spine, and has a salient tube underneath, shorter, however, than its principal point. Internally we find the spiral valve of the intestine and the pancreas united into a mass; but there is, moreover, a very large natatory bladder, communicating by a wide hole with the œsophagus.

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* The origin of this term is uncertain, and the mode of spelling it is twofold, *Acipenser* and *Accipenser*. The more correct mode, however, is with one *c*, as appears from a verse in LUCILIUS in Cic. de fin. l. 2: *Consumis squilla atque Acipensere cum decumano.* Martial also, xiii. 91, *Ad Palatinas Acipensera mittito mensas.* Some write *Aquipenser.*

The sturgeons ascend in abundance from the sea into certain rivers, where they constitute very profitable fisheries. Most of their species have well flavoured flesh. Caviare is made of their eggs, and isinglass of their natatory bladder.

Acipenser huso. (Linn.) *The Large Sturgeon.*

Descrip. Bucklers more blunt, muzzle and barbels shorter than in the ordinary sturgeon; the skin also is smoother. It often attains a length of from twelve to sixteen feet, and a weight of more than 1200 pounds.

Hab. The Caspian Sea, and the rivers which empty themselves into it, as the Wolga.

Food. Sea birds and small seals are often found in the stomach.

Use. The roe is prepared to form the substance called *caviare.* The flesh is not considered so good as that of some other species. The best *isinglass* is said to be obtained from the swimming-bladder of this species.

Acipenser guldenstadtii.

Under this head two varieties are found. In the one the osseous skin-scales, together with the bucklers and radiated streaks, as well as all the cutaneous scales, are very much developed; it accordingly appears rough, and bears the name of *Kostera.*

The other has the skin-scales less developed, so that on a superficial examination, when the skin is much covered with mucus, it seems to be almost smooth, though it feels rough. A specific difference between them is not to be found.

Acipenser ruthenus. (Linn.) *A. Pygmæus.* (Pall.) *The Sterlet*, or *Small Sturgeon.*

Descript. This is supposed to have been the *Elops*, and *Acipenser*, so celebrated among the ancients. It seldom exceeds two feet in length.

Hab. The Black and Caspian seas and their tributary rivers, and the Arctic Ocean.

Use. The flesh of this species is much esteemed; and the *caviare* obtained from it is reserved for the court. The swimming-bladder yields *isinglass.*

Acipenser stellatus. (Bl.) *A. helops.* (Pall.)

Descript. Attains a length of four feet. The snout is longer and smaller than that of the other species, and the bucklers more bristled.

Hab. The Caspian and Black Seas and their tributary rivers, where it is exceedingly abundant.

Use. Yields *caviare* and *isinglass.* The flesh is not so good as that of the common sturgeon.

ACIPENSER STURIO. (Linn.) *The Common Sturgeon.*

Descript. The body is elongated and angular; defended by indurated plates and spines, arranged in longitudinal rows; the snout is pointed; the mouth small, on the under side of the head, and without teeth. This species usually attains to a length of six or seven feet.

Hab. The Caspian and Black seas and their tributary rivers, but it is found on our coasts, and has been caught in the river Thames.

Use. The flesh is considered to resemble veal. It is pickled in brine, or sliced and frozen (*runkel.*) The sounds are made into a kind of isinglass; the back-bone, which is soft, is preserved by smoking (*chinolia. spinachia*). The roe is made into *caviare;* the skin is dressed for leather; that of the young fish is transparent, and sometimes used for covering windows.

Several species of sturgeon are found in the lakes, rivers, and seas of North America, which are peculiar to that country. Among these are the *Acipenser oxyrhyncus, Acipenser brevirostris, Acipenser rubicundus,* which very much resembles the *sterlet;* and the *Acipenser maculosus,* which resembles the *common sturgeon.*

ORDER 8. PECTOBRANCHII. (*Fixed branchiæ.*)

PETROMYZON BRANCHIALIS. (Linn.) *Pride, Lampern.*

This is employed as a bait for fishing-hooks.

PETROMYZON FLUVIATILIS. (Linn.) *The River Lamprey.*

Hab. This is found in fresh water.

PETROMYZON MARINUS. (Linn.) *The Great or Sea-lamprey.*

Hab. This fish ascends in the spring as far as the mouths of rivers. It is much esteemed as a delicacy for the table. Its flesh, however, is very difficult of digestion. It is glutinous, and is preserved, *potted lampreys,* by high seasoning. It was by indulging in this dish to excess that Henry II. lost his life.

RAIA BATIS. (Linn.) *The Skate. Blue Skate. Grey Skate.*

RAIA CLAVATA. (Linn.) *The Thornback.*

RAIA OXYRINCHUS. (*Raia rhinobatus.* Linn. ?) *White Skate.*

Use. The flesh of these different varieties of Raia is nutritive; it is generally salted, and dried for exportation.

RAIA SEPHEN. *Rousette.*

Skin dressed, (*galuchat, fish skin,*) transparent, used to cover boxes, cemented on green-stained paper, the tubercles filed down, polished, and the skin stained with verdigris, spots, circular, large, very beautiful.

RAIA TUBERCULATA. *Shagreen Ray.*

The skin dried, (*shark's skin, shagreen,*) is used to cover boxes.

SQUALUS CATULUS (ET SQ. STELLARIS,) (Linn.,) the male; and SQUALUS CANICULA, (Linn.,) the female. *The Spotted Dog-fish*, or *Rough-hound;* the *Chien de mer* of the French.

Use. The skin dressed, *shark-skin*, rough, used for polishing wood and ivory.

SQUALUS CARCHARÍAS. (Linn.) Sometimes called *Canis marinus*, or *Sea-dog. The White Shark.* The French call it *Requiem*, from its proving so destructive to man.

Hab. All seas indiscriminately.

Use. The flesh, though eaten sometimes, is not good; the liver is pressed for the oil. The teeth have been used to rub children's gums with, to make their teeth cut.

SQUALUS GALENS. (Linn.) *Melandre.*

SQUALUS SPINAX. (ACANTHIAS. Linn.)

The skins of these are dried, and used either as fish-skin for covering, or for polishing wood.

TORPEDO GALVANII. (Riss.) *The Cramp-fish.*

Hab. In the Nile and muddy parts of the sea.

Food. Fishes.

Use. Aperient when eaten. According to Dioscorides, being applied to the head it relieves pain. This and other species of the same genus have the property of communicating an electric shock when touched.

Second Division of the Animal Kingdom.

MOLLUSCA (Cuv.)—SOFT ANIMALS.

Heterogangliata. (Owen.) *Cyclogangliata.* (Grant.)

The *Mollusca* have neither an articulated skeleton, nor a vertebral canal. Their nervous system is not united in a spinal marrow, but merely in a certain number of medullary masses dispersed in different points of the body, the chief of which, termed the brain, is situated transversely on the œsophagus, and envelopes it with a nervous collar. Some of them respire elastic air, others salt or fresh water. The circulation in them is always double; that is, their pulmonary circulation describes a separate and distinct circle. The blood of the Mollusca is white or bluish. Their muscles are attached to various points of their skin. Their motions consist of various contractions, which produce inflexions and prolongations of the several parts, or a relaxation of the same, by means of which they swim, creep, and seize on various objects. Their irritability is in general very great, and remains for a long time after they are divided. Nearly all the Mollusca have a development of skin which covers their body, more or less resembling a *mantle.* The Naked Mollusca are those in which the mantle is merely membranous. When the substance constituting the mantle becomes so much developed that the contracted animal finds a shelter beneath it, it is then termed a *shell,* and the animal is said to be Testaceous.

The Mollusca are divided into six classes.

Mollusca.

1. Cephalopoda, (κεφαλη, head, πους, foot, from their crawling by means of appendages on the head.)
2. Pteropoda, πτερον, a fin, the organs of locomotion being fins attached to the neck.)
3. Gasteropoda, (γαστηρ, belly, from their crawling by means of a fleshy disc on the belly.)
4. Acephala, (α priv., κεφαλη, head; having no apparent head.)
5. Brachiopoda, (brachium, an arm, having fleshy or membranous arms.)
6. Cirrhopoda, (cirrus, from the abdomen being furnished with filaments named cirri, or ciliated articulations, corresponding to feet, or fins.)

CLASS I. CEPHALOPODA. (Class V. of General Division.)

This class of animals, which contains but one order having the same name, includes six genera. These animals are remarkable for a peculiar and intensely black secretion with which they darken the surrounding water, when they wish to conceal themselves.

Sepia elegans. (Blainville.)

Hab. The coasts of Sicily, where it is called *Sepia mezzana.*

Use. Yields part of the cuttle-fish bone of commerce.

Sepia loligo. (Linn.) *Calamary. Anchor-fish. Poor Cuttle.*

The flesh well washed, after the ink has been let out, is white, and being dressed, has the taste of veal.

Sepia officinalis. (Linn.) *Cuttle-fish.*

Hab. Found in all our seas.

Food. Small fishes and crustacea.

Use. The bone, *os sepiæ,* is sometimes given to calves as an astringent. It is often used in tooth-powders; for polishing metals; and to make moulds for casting small gold and silver work, as it takes a good impression from the pattern. The fluid contained in the *ink-bag* is used as a pigment.

CLASS II. PTEROPODA. (CLASS VI. of General Division.)

In the animals of this class, the organs of locomotion have the appearance of wings, or fins. These animals yield nothing to medicine.

CLASS III. GASTEROPODA. (CLASS VII. of General Division.)

This is a very numerous class of molluscous animals. They are either naked or testaceous. The class has been divided into eight orders, namely, 1. *Pulmonaria,* to which order belong the *Helix pomatia,* or snail, and the *Limax rufus,* or slug. 2. *Nudibranchiata,* to which belongs the genus *Doris.* 3. *Inferobranchiata.* 4. *Tectibranchiata.* 5. *Heteropoda.* 6. *Pectinibranchiata,* containing the genera *Purpura, Turbo,* and *Murex.* 7. *Scutibranchiata,* containing the *Haliotis.* 8. *Cyclobranchiata.*

DORIS. (Linn. Cuv.) *Beche de Mer.*

Description. The anus opening on the posterior part of the back, and the branchiæ arranged around the anus, in the form of small sprouts, resembling all together a kind of flower. The mouth is a small projection situate beneath the anterior edge of the mantle, and furnished with two small conical tentacula. Two other tentacula proceed from the superior and anterior part of the mantle. The organs of generation open near its right border. The stomach is membranous. A gland interlacing with the liver pours out a peculiar liquor through a foramen situate near the anus. The species are very numerous, and they attain a considerable size.

Hab. They are found in all seas. Collected on the west coast of New Holland.

Use. When dried, they are used for making a rich soup.

HALIOTIS. (Linn.) *Sea-ear.* (ἁλς, sea, and ους, ear.)

Description. One of the most ornamented of Gasteropods. All round its foot to its mouth there is a double membrane cut out into leaflets and furnished with a double row of filaments. On the outside of its long tentacles are two cylindrical projections for carrying the eyes. The mantle is deeply divided on the right side, and the water, which passes by means of holes in the shell, can, through this slit, penetrate into the branchial cavity. The mouth is a short proboscis.

The most common species is the *Haliotis tuberculata.* This there can be no doubt is the αγριαλεπας, ην τινες καλοῦσι θαλαττιον ους, "the wild *lepas,* which some call the *sea-ear,*" of Aristotle, Hist. An. lib. iv. c. 4.

Hab. This is very common at Guernsey and Jersey.

Use. The flesh is pickled in vinegar and very highly spiced, and is imported as food from Guernsey. The inhabitants of this place and Jersey ornament their houses with the shells, placing them so that their bright interior may catch the rays of the sun.

Helix pomatia. (Linn.) *Escargot. The Garden Snail.*

Description. Shell globular, of a reddish colour, marked with stripes of a somewhat paler colour. Aperture almost semicircular and oval. Border of the aperture a bluish, rose-red colour. Umbilicus covered.

Hab. England, France, Prussia, Denmark, and Sweden.

Food. Succulent plants.

Use. In some countries they are used for the preparation of snail-broth. Snails have been recommended in certain diseases of the lungs and air-tubes.

Limax. (Linn.) *The Slug.*

This animal belongs to the Terrestrial Pulmonaria, which genus is generally characterised by having four tentacula; such as have no apparent shell, form in the Linnæan system the genus Limax. To this belongs the

Limax rufus. (Linn.) *The Slug.*

This is to be met with at every step we take in wet weather; it is sometimes almost entirely black.

Use. The soup of this slug has been recommended in pulmonary affections.

Murex. (Linn.)

Gen. char. Animal furnished with two long and approximated tentacles; mouth without jaws, but armed with hooked tentacles in lieu of a tongue; foot rounded, generally rather short; mantle large, often ornamented with rings on the right side only; branchiæ formed of two unequal pectinations; anus on the right side in the branchial cavity; orifice of the oviduct on the right side at the entrance of the same cavity; orifice of the deferent canal at the end of the exciting organ, on the right side of the neck.

Shell, oval, oblong, more or less elevated on the spiral side, or prolonged forwards; external surface always interrupted by rows of varices in the form of spires, or simply tubercles, generally arranged in regular and constant order; aperture oval, terminated anteriorly by a straight canal, more or less elongated and closed; right tip often plaited or wrinkled. *Operculum* horny.

MUREX BRANDARIS.

Descript. Shell subovate, surrounded with straight spines; beak moderately long, subulate straight, and obliquely surrounded with spines.

Hab. It inhabits the Mediterranean and Adriatic seas; the shell is white, cinereous or brownish, with a triple row of small spines, the third row shorter, rarely a single row, with the beak unarmed.

PURPURA. (Brugiere.) *Purple-fish.*

It is known by its flattened columella, which is trenchant near the end opposite to the spine, and which, with the external margin, forms a canal there, sunk in the shell, but not salient. The Purpuræ were scattered among the Buccinæ and Murices of Linnæus. The animal resembles that of a true Buccinum.

It has been usual to confound together the genera of the Murex and Purpura, and to use the words as synonymous; but though there is some general resemblance between many of the shells of the two genera, yet they are easily distinguished by this, that the mouth of the purpura is less long, and is less dentated and alated than that of the murex. The body and the head of the shells of this genus are not so elevated as those of the murex kind, and are not covered with points or buttons at the mouth. If a shell is therefore found to have a small, smooth, and round mouth, and a body covered with undulated leaves, and sometimes with long points, and its tail, whether long or short, be hollowed and somewhat bent, this may be called a purpura, and not a murex. Linnæus makes the purpura a species of murex.

Use. The purpura as well as the murex served among the ancients to afford the fine purple dye they were so fond of, and some of the Buccinæ (*e. g.* the *Lapillus* of Linnæus) have been of late found to possess the same property.

Hab. The purpura and murex are both fished up in great plenty in the Gulf of Tarentum; but the small quantity of the coloured juice which each fish contains, and the necessity of using it before the animal dies, render it impossible to make it a regular article of traffic. The ancients used this colour only on cotton and woollen stuffs; whereas our cochineal, which was unknown to the ancients, strikes equally well on silks and stuffs. These shells are also found in various parts of the Mediterranean. In the seas of the Spanish West Indies about Nicoya is found a shell-fish which perfectly resembles the ancient purpura, and is probably the very same. The purple dye is said to lie in the throat of the fish. On the coasts of the South Sea, near the Equator, there are found certain sea-snails, sticking to the stones, which contain a liquor or juice having the true colour of purple. The modern purple fish is a kind of Buccinum, and it appears from Pliny, that part of the ancient purple was taken from this kind of shell-fish.

Food. The purpura lives on other fish. It usually hides itself at a small depth in the sand, and as it lies hid, it thrusts up a pointed tongue, which wounds and kills anything that comes near it.

TURBO. (Linn.)

This comprehends all the species with a completely and regularly turbinated shell and a round aperture. Lamark has thus described the

TURBO (properly so called.)

Descript. Shell round or oval, and thick; the aperture completed on the side next the spire, by the penultimate whorl. The animal has two long tentacula, and the eyes placed on pedicles at their external base; the sides of the foot are provided with membranous wings, sometimes simple, at others fringed, and sometimes furnished with one or two filaments.

Use. The shelly operculum of one of the species of the genus *Turbo*, namely, *T. pullus*, called *Guernsey eye-stone*, when put into the corner of the eye, works its way out at the other corner, and brings out any substance with it that may have been accidentally introduced.

CLASS IV. ACEPHALA. (CLASS VIII. of General Division.)

The acephala have no apparent head; but a mere mouth concealed in the bottom or between the folds of their mantle. The latter is almost always doubled in two, and encloses the body, as a book is clasped by its cover; but it frequently happens, that, in consequence of the two lobes uniting, it forms a tube; sometimes it is closed at one end, and then it represents a sac. This mantle is generally provided with a calcareous bivalve, and sometimes multivalve, shell, and in two genera only is it reduced to a cartilaginous, or even membranous nature. The brain is over the mouth. The branchiæ usually consist of large lamellæ covered with vascular meshes, under or between which passes the water. From these branchiæ the blood proceeds to the heart, generally unique.

All the acephala are aquatic.

CARDIUM EDULE. (Linn.) *The Cockle.*

A species of the genus *Cardium*, a name given to it from some resemblance of its figure to that of a heart.

Use. Flesh eaten raw or dressed; it is also pickled for sauce.

MYA MARGARITIFERA. (Linn.) *Pearl Mussel.*

This is a species of the genus *Unio;* the anterior tooth in it is more or less stout and unequal.

Hab. Found in fresh water in running streams in France.

Use. The mother-of-pearl of this large thick species is so beautiful that its concretions are used in dress as pearls.

MYA PICTORUM. (Linn.)

This is also a species of the genus *Unio.* It is an oblong and thin species known to every one.

Use. Shells, *colour shells*, used to spread colours upon.

MYTILUS EDULIS. (Linn.) *Common Mussel.*

Hab. The common mussel is frequently seen suspended in extended clusters, along the whole coast of France, to rocks, piles, &c.

Use. It forms a considerable item of food; but is dangerous if eaten to excess.

MYTILUS MARGARITIFERUS. (Linn.) *The Pearl Mussel.*

This is a species of the genus *Avicula* of Brugiere. It has nearly a semicircular shell, greenish without, and ornamented with the most beautiful nacre within.

Use. The nacre is employed in the arts, and it is from the extravasation of this substance that the oriental or fine pearls are produced, taken by the divers at Ceylon, in the Persian Gulph, &c.

MYTILUS HIRUNDO. (Linn.)

This is a species of *Avicula* of Brugiere. It is remarkable for the pointed ears which extend its hinge on each side. Its byssus is coarse and stout, resembling a little tree.

Hab. The Mediterranean.

OSTREA EDULIS. (Linn.) *The Common Oyster.*

Linnæan definition of the genus Ostrea. Animal tethys. Shell bivalve, inequivalve, subaurited. Hinge edentulous, with a hollow, ovate little excavation and lateral transverse striæ.

The *true oysters* have been divided into two groups:—

A. True oysters with simple or undulated, but not plaited, valves.

B. True oysters with the borders of their valves distinctly plaited.

A. This considerable group, which consists of between thirty and forty recorded species, (recent,) may be illustrated by the well-known *Ostrea edulis,* or *common edible oyster* of the European seas. These are the *Ostreæ* of the ancient Italians, *Ostras* of the Spaniards; *Austern* of the Germans; and *Huitres* of the French. The Roman epicure well knew the value of the British oyster. (Juv. iv. 140.) There are gradations, however, in the quality of the British oyster, the animal varying much both in size and flavour, according to the nature of the coast and the food with which the locality is furnished. The oysters on the south coast are generally very well flavoured; the best being found at Purfleet, and the worst at Liverpool. Colchester and other places in Essex are the great nurseries or feeding-grounds for supplying the metropolis, and, indeed, in a great measure, England generally.

Food. The favourite food of the oyster consists of a green *navicula*, (*Vibrio navicularis*,) and various species of that and other genera of *Infusoria;* these make the oyster fat, tender, and peculiarly well flavoured.

Use. Flesh eaten raw or dressed, also pickled in vinegar and brine. The shells exposed to the air for months to bleach, *testæ ostreorum*, used in medicine as an absorbent.

PECTEN MAXIMUS. (Brug.) *Ostrea maxima.* (Linn.) *The Scollop.*

The scollops found on the French coast have convex valves, one whitish and the other reddish, each having fourteen ribs, broad and longitudinally striated.

Use. The flesh, when dressed, is eaten. They are also pickled in vinegar.

PINNA. (Linn.)

Gen. char. Two equal valves forming a segment of a circle, or resembling a half-opened fan, closely united by a ligament along one of their sides.

PINNA NOBILIS. (Linn.)

This species is distinguished by the valves being roughened, with recurved and semitabular plates. It remains half-buried in the sand, and anchored by its byssus.

Use. The byssus, which is extremely fine and brilliant, is used as silk for fabricating the most costly stuffs. It also produces pearls of considerable size, but tinged with brown.

CLASS V. BRANCHIOPODA. (CLASS IX. of General Division.)

These, like the acephala, have a bilobed mantle, which is always open. Instead of feet, they are provided with two fleshy arms. The mouth is between the bases of the arms. All the branchiopoda are invested with bivalve shells, fixed and immoveable.

CLASS VI. CIRRHOPODA. (CLASS X. of General Division.)

The cirrhopoda, in several points of view, are intermediate between this division and that of the articulata. Enveloped by a mantle, and testaceous pieces which frequently resemble those seen in several of the acephala, their mouths are furnished with lateral jaws, and the abdomen with filaments, called cirrhi, arranged in pairs, composed of a multitude of little ciliated articulations, and corresponding to a sort of feet or fins similar to those observed under the tail of several of the crustacea. Their heart is situated in the dorsal region, and the branchiæ on the sides; the nervous system forms a series of ganglions on the abdomen. The position of these animals in the shell is such that the mouth is at the bottom and the cirrhi near the orifice. These animals are always fixed. Linnæus comprised them all in one genus LEPOS. Brugiere has divided them into two.

Third Division of the Animal Kingdom.

ARTICULATA. (Cuv.) ARTICULATED ANIMALS.

Homogangliata. (Owen.) *Diploneura.* (Grant.) *Annulosa.* (Macleay.)

This, the third general form is as well characterized as that of the vertebrata; the skeleton is not internal as in the latter; the articulated rings which encircle the body, and frequently the limbs, supply the place of it, and as they are usually hard, they furnish to the powers of motion all requisite points of support; so that here, as among the vertebrata, we find the walk, the run, the leap, natation, and flight. This great division is divided into four classes.

1. Annelida, (Lam.,) or worms with red blood. (Cuv.) 2. Crustacea. 3. Arachnida. 4. Insecta.

CLASS I. ANNELIDA. (CLASS XI. of General Division.)

Char. Body soft, elongated, articulated, or divided into segments or transverse folds.

The annelida are divided into three orders, viz.:—

1. Tubicola. 2. Dorsibranchiata. 3. Abranchiata.

ORDER 1. TUBICOLA.

DENTALIUM. (Linn.) *Dog-like tooth shell.*

This is a pipe of about three inches long, thick at one end, and small at the other. This pipe is of a greenish shining white; is hollow, light, of the size of a quill at the thick end, and smaller by degrees to the other end. It was used in medicine as an absorbent. (See Pomet.)

ORDER 3. ABRANCHIATA.

LUMBRICUS TERRESTRIS. (Linn.) *Earth-worm.*

Hab. Almost everywhere.

Food. Earth.

Use. According to Pliny, the ashes of earth-worms with oil preserve hair from hoariness. According to the same authority, drank with wine they are beneficial in breaking vesical calculi. Various other virtues have been assigned to them.

HÆMOPIS SANGUISORBA. (Sav., Moq. Tand.) *Hirudo sanguisuga.* (Linn.) *The Horse Leech.*

This is usually larger than the ordinary medicinal leech; the colour is, above, of a greenish black; beneath, greenish, cinereous with black spots. The teeth are blunt, flattened, and fewer in number than those of the medicinal leech, and they are incapable of penetrating the human skin. They are said to produce troublesome wounds where they have attempted to puncture the skin. They are found throughout Europe in ponds.

SANGUISUGA CHLOROGASTER, (Brandt,) sometimes met with among the speckled leeches from Russia. Back coloured as the preceding. Belly brighter green tint, speckled with small brownish-red spots.

SANGUISUGA INTERRUPTA. (Moq. Tand., Brandt.) *Sangsue interrompue.* (Audonin.) *Sangsue marquetee.* (Bl.) *The interrupted Gibraltar green, or Morocco leech.*

Char. Back of a beautiful pea or grass-green; sometimes in the smaller varieties it has an ochre or brownish tint. The two marginal bands yellow, broad, and well-marked: the dorsal interrupted. Belly generally of a duller green. These leeches are collected in Morocco, and exported by way of Gibraltar.

SANGUISUGA MARGINATA. (Letheby.)

Char. Back and belly almost black, or very dark green, with no spots, but having a bright yellow or orange marginal band running the full length of each side of the body.

SANGUISUGA MEDICINALIS. (Sav., Moq. Tand., Brandt.) *Hirudo medicinalis.* (Linn., Mull., Cuv., Car., Johnson.) *Sang-*

sue medicinale grise. (Bl.) *Hirudo officinalis.* (Derh.) *Old English, or speckled leech. Hamburgh grey, or Russian leech.*

Char. Back dark olive, sometimes almost black or brown, with six orange, or rusty yellow longitudinal bands—two marginal, and four dorsal. Belly dirty yellowish, or light olive green, spotted more or less with black. This is the most valuable of the commercial leeches. It is imported, by way of Hamburgh, from the northern countries of Europe, as Russia, Norway, Sweden, &c.; it was formerly to be obtained in England, but from the great demand, and the destruction of its haunts, it is now nearly extinct.

SANGUISUGA OBSCURA. (Moq. Tand.) *Sangsue noire.* (Bl.)

Char. Back either dark rusty brown, or black, with the central dorsal bands very indistinct. The two lateral bands orange yellow. Belly, greenish, spotted, or not spotted.

This is frequently met with among the Spanish and French green leeches.

SANGUISUGA OFFICINALIS. (Sav., Moq. Tand., Brandt.) *Sanguisuga medicinalis.* (Risso.) *Sangsue medicinale verte.* (Bl.) *Hirudo officinalis.* (Geiger.) *Hirudo provincialis.* (Carena.) *Hamburgh and French green leech.*

Char. Back brownish olive green, with six yellow or reddish longitudinal bands. Belly light dirty pea-green, or yellowish-green, free from spots, but exhibiting the two lateral stripes. There are two varieties of this species in commerce, one being collected in the central parts of Europe, and called the *German*, or *Hamburgh green;* it is the largest and best. The other variety is collected in the more northern countries, and is known as the *French*, or *Spanish green;* they are of less value, are of small size, and very unhealthy, from a fraud which the natives are guilty of before exporting them, that is, of filling them with blood, so as to improve their appearance, and make them look larger; they are consequently very indisposed to bite, and must be kept some time before they are saleable.

SANGUISUGA VERBANA. (Moq. Tand., Brandt, Carena.) *Sanguisuga cavena.* (Risso.) *Sangsue medicinale de verbano.* (Bl.) *Sangsue de sac majeur.* (Audonin.)

Char. Back deep dirty green, with the two lateral or marginal bands rusty yellow; along the middle of the back there is a double row of longitudinal ochre yellow stripes, each stripe running for the space of three rings; the back also exhibits a series of black transverse bands, which occur about every sixth ring. Belly brownish-green, either without spots, or with very small ones. This leech is common in some of the Italian lakes.

CLASS II. CRUSTACEA. (Class XII. of General Division.)

The crustacea are articulated animals, with articulated feet, respiring by means of branchiæ, protected in some by the borders of a shell, and external in others. Their circulation is double. Their envelope is usually solid, and more or less calcareous.

Cancer astacus. (Linn.) *Astacus fluviatilis.* (Fabr.) *The Crawfish. The River Crawfish, or Cray-fish.*

The crawfish is found in the rivers of Europe, especially those having a clayey bottom. It sometimes, although very rarely, attains the size of a small lobster, but usually does not exceed four or five inches in length. The colour, when alive, is olivaceous or dark brown.

The concretions, commonly called *crab's eyes,* or *crab's stones,* (*Lapilli Cancrorum,*) are found in the stomach of this animal, about the period at which it changes its shell. These concretions are white, and resemble in appearance small mushrooms. They vary in size from a quarter to five eighths of an inch in diameter, and consist of carbonate, with a little phosphate of lime and animal matter. *Crab's eyes* are said to be procured in the greatest abundance at Astracan. They were formerly used as absorbents and antacids.

Cancer gammarus. (Linn.) *Astacus marinus.* (Fabr.) *The Lobster.*

The lobster is met with in the European ocean, the Mediterranean, and on the coasts of America. Its flesh is esteemed as an article of food.

Cancer pagurus. (Linn.) *The common, or black-clawed Crab.*

Char. Shell, granulated with nine folds on each side; front with three lobes; apex of the hand black.

The crab occurs in great abundance during the summer months on all our rocky coasts, especially where the water is deep. It is considered to be in season between Christmas and Easter. The tips of the claws, and crustaceous covering, when reduced to powder, have been used as an absorbent and antacid.

Oniscus armadillo. (Linn., Gmel.) *Armadillo vulgaris.* (Lat.) *Cloporte armadillo.* (Geoff.) *Millepedes, common armadillo, or Pill Millepede.*

This animal is commonly met with amongst moss, and under stones. Its length is rather more than half an inch. The body is elongate-ovate, somewhat convex above, smooth, and consists of ten crustaceous semicircular scales, or segments of a cinerious lead colour; the posterior margin of the segments are whitish. It has seven pairs of very short legs, each terminated by a minute horny claw. When touched, it rolls itself up into a ball, like the singular quadrupeds called Armadillos.

Millepedes are prepared by exposing them to the vapour of hot alcohol, which kills them. In this state they are always contracted into the globular form, and are thus distinguished from wood-lice, which have sometimes been confounded with them.

They were formerly administered in medicine, and considered to be expectorant, aperient, and diuretic.

Oniscus asellus. (Gmel.) *Oniscus Murarius* (Fabr.) *Cloporte ordinaire.* (Geoff.) *The Wood-louse, Sow-louse, Church-louse, Pig's-louse*, or *Carpenter.*

The French name, *Cloporte,* applied to this and the preceding species, is abbreviated from *Clous-à-porte.* The wood-louse is met with throughout Europe, in rotten wood and old walls. It is somewhat larger than the millepede, being about three-fourths of an inch in length. The body is oval, with crustaceous imbricate segments, rough above, and of a livid brown or dirty ash-colour; the sides are yellowish, and the belly nearly white. The body is not capable of contracting into a ball.

CLASS III. ARACHNIDA. (Class XIII. of General Division.)

The *Arachnida*, comprising the third class of articulated animals, provided with moveable feet, are, as well as the crustacea, deprived of wings, are not subject to changes of form, or do not experience any metamorphosis, simply casting their skins. They differ from the crustacea, as well as from insects, in several particulars. Like the latter, the surface of their body presents apertures called *stigmata*, for the introduction of air. Respiration is effected either by air-branchiæ, or by radiated tracheæ. Most of the Arachnida feed on insects, which they either seize alive, or to which they adhere, abstracting their fluids by suction. Others are parasitical, and live on vertebrated animals. Some are found in flour, cheese, and in various vegetables. The Arachnida are divided into two orders; 1. Pulmonaria. 2. Trachearia. The former have pulmonary sacs, a head with distinct vessels, and six or eight ocelli. The Trachearíæ respire by tracheæ, and have no organs of circulation, or if they have, the circulation is not complete.

ACARUS SCABIEI. *Sarcoptis hominis*, (Raspail.) *The Itch Acarus.*

This little animal is thought by some to be the cause of the disease called itch. It is found in the neighbourhood of the pustules on persons affected with this disease.

ARANEA DOMESTICA. (Linn.) *The common House Spider.*

Hab. Almost everywhere, in corners of houses, &c.

Food. Flies, wasps, &c.

Use. Pliny used the cobwebs of the house spider in the cure of epiphora. Theophrastus mentions it as a useful application for stopping hæmorrhages.

ARANEA TARENTULA. (Linn.) *Lycosa Tarentula.* (Latr.) *The common Tarentula.*

The bite of this spider has been described by travellers as being generally fatal, and curable only through the influence of music. It is a native of the south of Europe, and is generally found during winter in a deep hole formed in the declivity of small hillocks, but in the summer it keeps in the air and spins its web. It is one of the largest of the European spiders; the upper part of the body is of a greyish-brown colour; the margin of the thorax is grey, with a radiated dorsal line of the same colour; the anterior part of the dorsum of the abdomen is marked with triagonal spots; the belly is of a fine deep saffron colour, with a transverse black band.

The name Tarentula is derived from Tarentum, (now Taranto,) in the kingdom of Naples, near which place they were supposed to be found in the greatest abundance.

SCORPIO AFER. (Linn.) *The Indian Scorpion.*

Hab. India, Persia, and some parts of Africa.

This is the largest and most formidable of the scorpion tribe, measuring eight or ten inches in length. It is much dreaded on account of the poisonous effects of its sting.

SCORPIO AMERICANUS. (Linn.) *The American Scorpion.*

Hab. South America, and Sierra Leone, in Africa.

SCORPIO AUSTRALIS. (Linn.) *The African Scorpion.*

An inhabitant of Africa; the body is brown; the legs reddish; the hands long, smooth, rufous, and furnished with filiform claws.

SCORPIO EUROPÆUS. (Latr.) *The European Scorpion.*

This species is met with in the south of Europe, especially in many parts of Italy. Much pain and inflammation are caused by its sting, but it is not considered dangerous.

SCORPIO MAURUS. (Linn.) *The Barbary Scorpion.*

An inhabitant of Barbary.

Scorpio occitanus. (Amor.) *The Yellow Scorpion.* This is the animal with whose poison Redi and Maupertius made their experiments. It is very common in Spain, under stones, in warm sandy mountainous situations. It is rather a small species, of a pale yellowish colour. The body is oblong, ovate, about an inch and a half in length, and divided into six or seven segments. The legs are eight in number, slightly hairy underneath, and terminated by two small curved claws.

Scorpions feed on worms, spiders, small insects, and even one another. All the species are natives of warmer climates than ours. They run quickly, bending their tails in the form of an arch over their back. They are ovo-viviparous, the body of the pregnant female exhibiting, when dissected, between forty and fifty young.

The poison of scorpions, though much more active, is said to resemble that of bees and wasps in many of its chemical characters.

CLASS IV. INSECTA, INSECTS. (Class XIV. of General Division.)

Insects form the most numerous class of all the animal kingdom. The bodies of this class of animals (with the exception of the *Myriapoda*) have been divided by naturalists into three parts: the head, which bears the antennæ, the eyes, and the mouth; the thorax or corslet, which bears the feet and the wings, when there are any; and the abdomen, which is suspended behind the thorax, and contains the principal viscera. Those insects which have wings, do not receive them till they are of a certain age, and frequently pass through two forms, more or less different, before they assume that of the winged insect. In all their states of existence they respire by means of tracheæ, that is to say, by elastic vessels, which receive the air through stigmata, or external apertures in the sides of the body, and distribute it by means of numberless ramifications, to all parts of the body. There is but a vestige of a heart perceptible, and this consists of a vessel which lies along the back, and which exhibits alternate contractions, but from which no branches can be discovered to go off; so that we must conclude that the nutrition of the parts is carried on by imbibition. It is probably this sort of nutrition which induced the necessity of that kind of respiration peculiar to insects, because the nutritious fluid which was not contained in vessels, not being capable of being directed towards pulmomonary organs so circumscribed as to receive the air, the air must be diffused throughout the entire body, in order to act on this fluid. It is for this reason that insects have no excretory glands, but only long spongy vessels, which appear to absorb through their great extent of surface, from the mass of the nutritious fluid, the peculiar juices which they are to produce.

The class of insects has been divided into twelve orders;—

The three first are composed of *apterous* insects, (α priv, and πτερον, wing,) undergoing no essential change of form or habits, but merely subject to simple changes of tegument, or to a kind of metamorphosis, which increases the number of legs, and that of the annuli of the body. The organs of sight in these animals is usually a mere assemblage, more or less considerable, of ocelli resembling granules.

The first order, the Myriapoda, (μυριοι, ten thousand, and πους, a foot,) has more than six feet—twenty-four and upwards —arranged along the whole length of the body, on a suite of annuli, each of which bears one or two pairs, and of which the first, and, in several instances, even the second, seem to form a part of the mouth. They are apterous. In the *second*, or the Thysanoura, (θυσανοι, fringe, and ουρα, a tail,) there are six legs, and the abdomen is furnished on its sides with moveable parts, in the form of false feet, or terminated by appendages fitted for leaping. In the *third*, or the Parasita, (παρα, and σιτον, food, or corn,) we find six legs, no wings, and no other organs of sight than ocelli; the mouth, in a great measure, is internal, and consists of a snout, containing a retractile sucker, or in a slit between two lips, with two hooked mandibles. In the *fourth*, or the Suctoria, (*sugo*, to suck,) there are six legs, but no wings; the mouth is composed of a sucker inclosed in a cylindrical sheath, formed of two articulated portions. In the *fifth*, or the Coleoptera, (κολεος, sheath, and πτερον, a wing,) there are six legs, and four wings, the two superior of which have the form of cases, and mandibles and maxilla for mastication; the inferior wings are simply folded cross-wise, and the cases, always horizontal, are crustaceous. They experience a complete metamorphosis. In the *sixth*, or the Orthoptera, (ορθος, straight, and πτερον, wing,) there are six legs, four wings, the two superior in the form of cases, and mandibles and jaws for mastication, covered at the extremity by a *galea;* the inferior wings are folded in two directions, or simply in their length, and the inner margins of the cases, usually coriaceous, are crossed. They only experience a semi-metamorphosis. In the *seventh*, or the Hemiptera, (ημι, half, and πτερον, a wing,) there are six legs and four wings, the two superior in the form of crustaceous cases, with membranous extremities, or similar to the inferior, but larger and firmer: the mandibles and jaws are replaced by setæ forming a sucker, inclosed in a sheath, composed of one articulated, cylindrical, or conical piece, in the form of a rostrum. In the *eighth*, or the NEUROPTERA, (*νεορον*, nerve, or view, and *πτερον*, a wing,) there are six legs, four membranous and naked wings, and mandibles and jaws for mastication; the wings are firmly reticulated, and the inferior are usually as large as the superior, or more extended in one of their diameters. In the *ninth*, or HYMENOPTERA, there are six feet, and four membranous and naked wings, and mandibles and jaws for mastication; the inferior wings are smaller than the others, and the abdomen of the female is almost always terminated by a terebra, or sting. In the *tenth*, or LEPIDOPTERA, (λεπις, scale, and *πτερον*,) there are six legs, four membranous wings, covered with small coloured scales resembling dust; a horny production in the form of an epaulette, and directed backwards, is inserted before each upper wing, and the jaws are replaced by two united tubular filaments, forming a kind of spirally convoluted tongue. In the *eleventh*, or the RHIPIPTERA, (*ριπις*, a fan, &c.,) there are six legs, two membranous wings, folded like a fan, and two crustaceous moveable bodies, resembling little elytra, situated at the anterior extremity of the thorax; the organs of manducation are simple, setareous jaws, with two palpi. In the *twelfth*, or the DIPTERA, (*δις*, two, and *πτερον*,) there are six legs, two membranous extended wings, accompanied in most of them by two moveable bodies, or halteres, placed behind them; the organs of manducation are a sucker, composed of a variable number of setæ, inclosed in an articulated sheath, most frequently in the form of a proboscis, terminated by two lips.

ORDER I. Myriapoda.

SCOLOPENDRA ALTERNANS. (Leach) *Alternate Centipede.*

Description. Segments transverse, alternately longer and shorter. Hinder legs, with the first joint rounded, and internally spinulose.

Hab. Unknown.

SCOLOPENDRA GIGAS. (Leach) *Gigantic Scolopendra.*

Description. Body, with the segments nearly equal. Length, eleven inches.

Hab. Unknown.

SCOLOPENDRA MORSITANS. (Linn.) *The Venomous, or Biting Centipede.*

Description. Body, with the segments elongate or subelongate, irregular. Colour, yellowish-brown; feet, forty-two, with the first joint spinulose on the internal side. Usual length, nine or ten inches, but sometimes longer.

Hab. Asia, Africa, and America.

The *centipedes* are animals of a very formidable appearance, and in warm climates, where alone they are found, they are viewed with fear and disgust. They are armed with strong horny jaws, furnished, like the sting of the scorpion, with a small orifice, visible under a common lens, from which a poisonous fluid issues, capable of producing violent local inflammation, fever, and, it is said, even death. De Geer, Catesby, and other authors, however, assert that the bite of the *scolopendra*, although more painful than that of the *scorpion*, seldom proves fatal to man and the larger animals.

ORDER 3. PARASITA.

PEDICULUS HUMANUS CAPITIS. (De Geer) *The Human-head Louse.*

Descript. An oval, lobed, cinereous body, marked with an interrupted band on either side. It deposits single nits or eggs in the hair of the head, and does not spontaneously quit the scalp or its natural covering.

PEDICULUS HUMANUS CORPORIS. (De Geer) *The Human-body Louse.*

Descript. It is white and nearly immaculate; it seldom appears on the head, but resides on the trunk of the body and on the garments. The nits are conglomerate, and usually deposited on the folds of linen and other articles of dress.

PEDICULUS PUBIS. (Linn.) *The Crab Louse.*

This parasite inhabits the eyebrows, pubes, &c., of men and women. It is distinguished by the cheliform structure of its legs, whence its name *crab-louse.* It frequently perforates the skin, and completely buries itself, so as to be with difficulty dislodged. In common with the rest of the family, it is furnished with a mouth consisting of a tubulose very short haustellum, but it has no mandibles, properly so called.

ORDER 4. SUCTORIA.

PULEX IRRITANS. (Linn.) *The common Flea.*

This animal is too well known to require description. It lives on the blood of man and other animals, such as the dog, the cat, &c., on whose bodies it is frequently found.

PULEX PENETRANS. (Linn.) *The Chegoe.*

This is one of the most troublesome and noxious insects of the lower regions of South America and the West India Islands. It is furnished with a rostrum as long as the body. It often introduces itself into the skin, usually under the nails of the toes, where it deposits its eggs, and produces malignant and sometimes fatal ulcers. Waterton, in his "Wanderings in South America," says, in alluding to this insect, "It looks exactly like a small flea, and a stranger would take it for one."

ORDER 5. COLEOPTERA.

CANTHARIS ALBIDUS. (Latr.) *Lytta albida.* (Say.)

Descript. Body black, entirely covered with dense prostrate greenish or yellowish white hairs; head with a longitudinal impressed line; antennæ subglabrous, first and second joints rufous, the latter nearly equal in length to the first; length nearly one inch. An inhabitant of the United States of America.

CANTHARIS ATOMARIA. Employed in the Brazils.

CANTHARIS ATRATA. (Latr.) *Lytta atrata.* (Fabr.) *Black cantharis.*

Descript. Entirely black, immaculate; length of male four lines; of female, five lines or more.

Hab. The United States of America, and Barbary.

CANTHARIS CINEREA. (Latr.) *Lytta cinerea.* (Fabr.) *Ash-coloured Cantharis.*

Descript. Body black, covered with a cinereous down; length six lines.

Hab. United States of America. It feeds on the leaves of the potato, English bean, wild indigo, and several other plants. It appears in July and August. Said to be equal, if not superior, as a vesicating agent, to any of the species of cantharis

CANTHARIS GIGAS. *Lytta cærulea.* (Pfaff) A native of Guinea and the East Indies.

CANTHARIS MARGINATA. (Latr.) *Lytta marginata.* (Fabr.) *Marginated Cantharis.*

Descript. Head, thorax, and abdomen, black, but nearly covered with an ash-coloured down; elytra black, with margins and suture ash-coloured; upper part of the abdomen, under the wings, marked with two longitudinal lines of a bright clay colour; length about six lines.

Hab. Fabricius mentions this species as a native of the Cape of Good Hope. It is also found in the United States of America, on the leaves and flowers of different species of *Clematis.*

CANTHARIS NUTALLII. (Latr.) *Lytta nuttallii.* (Say.)

Descript. Body glabrous; head deep greenish, with a rufous spot on the front; antennæ robust, surpassing the base of the thorax, black; thorax golden green; feet black; thighs blue or purplish. Length nine-tenths of an inch.

Hab. The State of Missouri, North America, and seems to be limited to the western region of the state.

CANTHARIS RUFICEPS. A native of Sumatra and Java, and is said to possess extraordinary blistering properties.

CANTHARIS SYRIACA. *Lytta segetum.* Employed in Arabia, according to Förskal. (Pereira.)

CANTHARIS VIOLACEA. *Lytta gigas mas.* (Buchner.) A native of the East Indies.

CANTHARIS VITTATA. (Latr.) *Lytta vittata.* (Fabr.) *The Striped Cantharis*, or *Potato-fly.*

Descript. Head light red, with vertical spots; antennæ black; thorax black, with three yellow lines; elytra black, with a central longitudinal fillet, and the whole margin yellow; abdomen and legs black, covered with a cinereous down. Length six lines.

Hab. The United States of America, principally the middle and southern states.

This species feeds principally on the wild potato plant, living in the soil about the roots of the plant, and ascending in the morning and afternoon, but avoiding the heat of the sun at noon. All the parts of this fly possess a vesicating property, and it is even said to be more certain in its effects than the common Spanish fly.

CANTHARIS VESICATORIA. (Latr.) *Melöe vesicatorius.* (Linn.) *Lytta vesicatoria.* (Fabricius) *Blistering Beetle*, or *Spanish Fly.*

Gen. char. Antennæ elongate, simple, filiform. Maxillary palpi with terminal joint somewhat ovate. Head large, heart-shaped. Thorax small, rather quadrate, narrower than the elytra, which are as long as the abdomen. Wings two, ample. (Stephens.)

Sp. char. Bright glossy brass-green or bluish, glabrous; beneath more glossy, with a few hairs. Breast densely pubescent. Head and thorax with a longitudinal channel. Elytra with two slightly raised lines. Tarsi violaceus. Antennæ black. (Stephens.)

Form elongated. Length six to eleven lines. Breadth one to two lines. Colour brass or copper green. Odour nauseous. Body covered with whitish grey hairs, most numerous on the thorax. Head large, subcordate. Eyes lateral, dark brown. Thorax not larger than the head, narrowed at the base. Elytra from four to six lines long, and from three-fourths to one and a-half lines broad. Legs stout, from four to six lines long. Abdomen soft, broadest in the female.

Hab. Europe, originally, perhaps, the southern parts, as Italy and Spain; now, however, found in France, Germany, Hungary, Russia, Siberia, and England. They are found on species of *oleaceæ*, and of *caprifoliaceæ.*

Food. The ash, rose, wild-olive, corn, &c.

Cantharides should be kept in well-stopped bottles; by the addition of a few drops of strong acetic acid they may be preserved from the attack of mites (*Acarus domesticus*). They are imported from St. Petersburgh, and also from Messina, chiefly towards the close of the year. The cantharides from St. Petersburgh are the largest and most esteemed.

MELOE MAJALIS. (Linn.) *The True Mayworm.*

Descript. Entirely black, glossy. The abdominal rings on the posterior brim generally present a rust-yellow margin.

Hab. Portugal, Spain, and the south of France.

Use. Its medicinal application is not satisfactorily established. (This must not be confounded with the *M. majalis* of Fabricius.)

MELOE VARIEGATUS. (Donav. Brit. Insect.)

Descript. Green, with a purple-red and a golden lustre, sheath-wings rugose.

Hab. Germany, England, France, and Italy.

MELOE PROSCARABÆUS. (Linn.) *The Oil-beetle.*

Descript. Bluish-black, with a violet and reddish violet shade. Thorax somewhat elongated and quadrangular, considerably dotted. Sheath-wings leather-like and wrinkled.

Hab. Portugal, Spain, France, Germany, and as far as Sweden, Siberia, &c.

Uses, &c. This has been used for a considerable time in several countries as a medicine, as in several forms of gout, renal diseases, dropsy, also in syphilis, gonorrhœa, intermittent fever, and jaundice. Its action is that of an acrid diuretic, somewhat similar to that of cantharides.

MYLABRIS CICHORII. (Fabric.) *The Banded Mylabris, Meloe Cichorii.* (Linn.)

Descript. About one inch and four lines in length. The sheath-wings black, each presenting anteriorly two almost quadrate, brownish-yellow spots, behind these, two brownish-yellow bands, each of which equals about one-sixth of the length of the sheath-wings.

Hab. The East Indies and China.

Use, &c. This insect, from its containing cantharidin, is used in the east for the same purpose for which we employ the Spanish fly. Dioscorides must have alluded to this animal, when he says, "The most efficacious cantharides are those of many colours, which have yellow transverse bands, with the body elongated, bulky, and fat; those of a single colour have no virtue." It is found on the flowers of the succory plant.

ORDER 7. HEMIPTERA.

CIMEX LECTULARIUS. (Linn.) *The Bed-bug.*

Hab., &c. It is generally believed that the bug was first introduced to this country in the fir-timber which was brought over for the purpose of rebuilding this metropolis after the great fire of 1666.

Food. Blood more particularly; they will also feed on dried paste, size, deal, beach, ozier. It is said that they will not touch oak, walnut, cedar, or mahogany, but this is not true.

COCCINELLA BIPUNCTATA. (Linn.)

Descript.. Circumference of the body rather oval than round. The entire lateral edge of the corselet white. Sheath-wings mostly red, with two black points; rarely black, with four or six red spots. 1½—2½ lines in length.

Use. Employed for the yellow fluid in which it abounds.

COCCINELLA SEPTEMPUNCTATA. (Linn.) *The common Lady-bird.*

Descript. Sheath-wings posteriorly entirely blunt, generally presenting seven dots. 3—3½ lines in length. Very finely dotted.

Hab. All over Europe.

Use. The same as that of cochineal in general.

COCCUS CACTI. (Linn.) *Cochineal.*

The cochineal insect is a native of Mexico; it feeds on various species of *Cactus* and the allied genera, especially the *Opuntia cochenillifera.* The insects are collected at different seasons. The product of the first collection, consisting of impregnated females, is best. They are killed by immersion in boiling water. They are imported into this country from Vera Cruz and Honduras. In this state the insect forms a roundish plano-convex body, rough and somewhat ringed on the back, weighing about one-tenth of a grain, and scarcely two lines in length. There are two sorts in commerce, the silver and the black cochineal. The silver is the most valued; it has a greyish-red colour, and the furrows of the rings are filled with a white bloom, which consists of a fine down.

Use. Used in medicine only as a colouring matter for giving a pleasing tint to other preparations. It is said to possess sedative or antispasmodic properties, and hence it has been sometimes employed in hooping-cough.

COCCUS ILICIS.

This insect lives upon the leaves of the *Quercus ilex.* The dried bodies of the female insects of this species constitute the *Kermes grains.*

Hab. The south of Europe; the female has no wings, is of the size of a small pea, of a brownish red colour, and is covered with a whitish dust. The kermes has been employed from time immemorial in India to dye silk.

COCCUS POLONICUS.

This is found upon the roots of the *Scleranthus perennis* and the *Scleranthus annuus*, in the sandy soils of Poland. It has been employed for the same purposes as the preceding. In Germany, during the 9th, 12th, 13th, and 14th centuries, the rural serfs were bound to deliver annually to the convents a certain quantity of kermes, the *coccus polonicus*, which from being collected on St. John's day with certain religious ceremonies, was called *Johannisblub.*

COCCUS LACCA. (Kerr.) *Coccus Ficus.* (Fabric.) *The Lac-insect.*

Descript. Head and body uniformly continued; both together oval, compressed, consisting of twelve cross-rings. Abdomen flat. Antennæ filiform, obtuse, about one-half of the body giving off two or three diverging hairs. Tail, a small white point, sending off the horizontal hairs about the length of the body. Feet half the length of the insect. About the size of a louse.

Hab. The East Indies. According to Kerr, the insect is to be found on both sides of the Ganges.

Food, &c. The animal lives on various trees, as the *Ficus religiosa* (Linn.); the *Ficus indica* (Linn.); the *Rhamnus jujuba ;* the *Croton lacciferum ;* and the *Butea frondosa*, which grow in Siam, Assam, Pegu, Bengal, and Malabar.

The male is about twice the size of the female, and has four wings; there is one to 5,000 females. In November or December the young brood escapes from the eggs, lying beneath the dead body of the mother; they crawl about, and fasten themselves to the bark of the shrubs. About this time the branches often swarm to such a degree with this insect that they seem covered with a red dust. These insects produce small nipple-like incrustations on the twigs, their bodies being apparently glued by means of a transparent liquor, which goes on increasing to the end of March, so as to form a cellular texture. At this time the animal resembles a small oval bag, without life, of the size of cochineal. At first a beautiful red liquor only is perceived, afterwards eggs appear; and in October or November, when the red liquor gets exhausted, twenty or thirty young ones bore a hole through the back of their mother and come forth. The empty cells remain on the branches. The twigs encrusted with the radiated cellular substance, constitute *stick-lac* of commerce. When the resinous concretion is taken off the twigs, coarsely pounded and triturated with water in a mortar, the greater part of the colouring matter is dissolved, and the remaining granular matter, dried in the sun, constitutes *seed-lac.* *Lac-dye* is the watery infusion of the ground stick-lac, evaporated to dryness and formed into cakes.

FAMILY 9. HYMENOPTERA.

APIS INDICA. (Fabr.) *The Indian Bee.*

Descript. Black, with a grey cinereous down, the first two segments of the abdomen and the base of the third reddish-brown.

Hab. Bengal, where, as well as at Pondicherry, it is cultivated.

APIS LIGUSTICA. (Spin.)

This species is very similar in appearance to our common hive-bee. It is a native of Italy and the islands of the Archipelago, where it is also cultivated.

APIS MELLIFICA. (Linn.) *The Honey-bee,* or *Hive-bee.*

This species is common in the wild state, in the forests of Russia, and in different parts of Asia, occupying cavities in trees and rocks. It is very rarely found wild in this country, and has therefore probably been domesticated at a very remote period, or introduced from abroad. It is very common in the woods of America, where it is supposed to have been carried in the sixteenth or seventeenth century.

The societies of bees include three kinds of individuals:—the neuters, or workers, forming the greater portion of the hive; the males, or drones, which are much less numerous; and the females, of which there is generally but one in each hive, known by the name of the *Queen-bee.* The neuters and the females are armed with a sting.

APIS UNICOLOR. (Latr.) Inhabits the Isle of France and Madagascar. It is almost black, shining, the abdomen without spots or coloured bands. The honey obtained from this species is much esteemed.

CYNIPS. (Linn.)

Descrip. They appear, as it were, humped, having the head small, and thorax thick and raised. The abdomen is compressed, cavinated at its under part, and truncated obliquely at its extremity.

CYNIPS BRANDTII. (Ratzeburg)

Essential Characters. In the female the antennæ consist of only twelve joints, the third joint scarcely longer than the others, the last the longest. Posterior part of the body entirely black. Male not to be distinguished from that of the *Cynips Rosæ,* (which see).

CYNIPS GALLÆ TINCTORIÆ.

Diplolepis gallæ tinctoriæ. (Olivier) *Cynips a la galle à teinture.* (Latr.) *Cynips quercûs infectoriæ.* (Nees ab. Es.)

Essential char. $2\frac{1}{8}$—3 lines in length, and when the wings are expanded 7—8 lines in breadth; a dirty yellowish brown, only above at the base of the back part of the body a shining blackish-brown. Areola of the upper wings very large and closed. Antennæ short, and of a brownish-yellow colour.

Hab. Asia Minor, Turkey in Europe, &c.

Food. These insects live on the oak, chiefly the *Quercus infectoria.*

CYNIPS ROSÆ. (Linn.) *Le Cynips du bedeguar.* (Latr.) *Diplolepis bediguaris.* (Geoffr.)

Ess. char. In the female the antennæ consist of fourteen joints; the third joint longer than the others. The hind-body reddish-yellow, black at the summit. Male entirely black, only from the third to the thirteenth joint of the antennæ, as also the haunches and the last tarsal joint brown.

Hab. The entire of Europe; very common throughout Germany. They live only on roses, and are found on the *Rosa canina*, the *Rosa villosa*, and the *Rosa sepium.*

FORMICA RUFA. (Linn.) *The Ant, Emmet, Pismire.*

Hab. Almost everywhere.

Food. Fruits, seeds, serpents, &c.

The ant, like the bee, is a social animal, and, as in the hive, three sexes are distinguished in an ant-nest—males, females, and mules. The latter alone labour, and take charge of the ova and young larvæ; they are destitute of wings. The males and females have wings, and do nothing but enjoy themselves; they copulate in the air, the males perish soon after, and the females deposit their ova in the ant-nest; but they do not live much longer than the males, for they perish at the approach of winter. The red ant contains a free acid in abundance. It also contains a resinous oil, acrid and odorous, which may be obtained, mixed with the acid, by means of alcohol; the resulting tincture is *Hoffman's Water of Magnanimity*, and has been supposed to possess aphrodisiac properties. The free acid of ants, or *formic acid*, has been taken by some chemists for acetic acid; but its particular and distinct nature was first ascertained by Arvidson and Oehrn. M. Doebereiner has shown that this acid is formed by a great number of re-actions on organic principles, and more particularly by treating citric, or tartaric acid, sugar, starch, &c., with peroxide of manganese and sulphuric acid. The acid is hydrated, liquid, volatile, not crystallizable; the property which distinguishes it most readily from acetic acid is that of reducing, by the help of ebullition, the oxides and salts of mercury and silver. Combined with bases, and anhydrous, its composition is, C^2, H^2, O^3.

VESPA CRABO. (Linn.) *The Hornet.*

This is the most formidable species of the genus met with in this country. It is much larger than the wasp, and its colours not so bright. The hornet's nest is usually built in hollow trees, or dry stony banks; it is composed of the bark of the ash-tree, detached in filaments, and ground by the mandibles of the insect into a paste, which hardens as the work goes on.

The sting of the hornet causes much pain and inflammation.

Vespa vulgaris. (Linn.) *The Wasp.*

The wasp's nest is made in much the same way as the hornet's nest. Both wasps and hornets frequently attack bee-hives, destroying the bees, and taking possession of, and consuming the honey.

Order 10. LEPIDOPTERA.

Bombyx mori. (Linn.) *The Silk-worm Bombyx.*

Description. The moth is whitish, with two or three obscure transverse rays, and a spot crossing the upper wings. Its caterpillar is the silk-worm.

It feeds on mulberry leaves, and spins an oval cocoon of a serrated tissue of very fine silk, generally of a bright yellow colour, but sometimes white. It will also feed on the lettuce and other plants, but it then yields silk of inferior quality. It was originally a native of the southern provinces of China.

Hepialus virescens.

This moth is a native of New Zealand, and is found only at the root of the rata tree, (*Metrosiderus robusta,*) a myrtaceous plant. The fungus called *Sphœria Robertsii,* is found growing on the larva of this insect.

Fourth Division of the Animal Kingdom.

ANIMALIA RADIATA. (Cuv.) RADIATED ANIMALS.

The Radiated Animals, or Zoophytes, as they are called, include a number of beings whose organisation, always more simple than that of the three preceding divisions, also presents a greater variety of degrees than is observed in either of them, and seems to agree but in one point, viz. their parts are arranged around an axis, and on one or several radii, or on one or several lines, extending from one pole to the other. Even the entozoa, or intestinal worms, have at least two tendinous lines, or two nervous threads proceeding from a collar round the mouth, and several of them have four suckers situated around a prosbosciform elevation. In a word, notwithstanding some irregularities, and some few exceptions—those of the

Planaria, and most of the Infusoria—traces of the radiating form are always to be found, which are strongly marked in the greater number, and particularly in Asterias, Echinus, the Acalepha, and the Polypi.

Thus Cuvier has included in this division all those animals which are not comprehended in the three preceding; but in doing so, he has departed from the principle upon which the classification of his three first divisions is founded. In all the animals comprising the vertebrata, mollusca, and articulata, the arrangement of the nervous system forms the essential distinguishing character; whilst in those comprising the radiata, the structure of the nervous system has been allowed to give place in importance to other characters, so that this division embraces creatures of very dissimilar and incongruous formations.

The success of Cuvier in selecting the nervous system as the great point of distinction in establishing the higher divisions of the animal kingdom, has led succeeding naturalists to attempt a further subdivision of the radiata in accordance with the same principle. From a careful examination of the creatures included in this division, it is found, that whilst in some of them nervous filaments are distinctly visible, there are, on the other hand, others in which no trace of distinct nervous matter can be discerned. The former of these have been classed by themselves, and designated by Mr. Owen the NEMATONEURA; (*νήμα*, a thread, and *νευρον*, a nerve;) and the latter have been formed into a distinct group, which has been denominated by Mr. M'Leay the ACRITA (*α*, priv., and *κρινω*, to discern.)

THE NEMATONEURA (Owen) includes, 1. *Bryozoa*, or *Polyps with ciliated arms*. 2. *Rotifera*. 3. *Epizoa*. 4. *Cavitary entozoa*, or *Cœlelmintha*. 5. *Echinodermata*.

THE ACRITA, (M'Leay,) CRYPTONEURA, (Rudolphi,) includes, 1. *Sponges*. 2. *Polyps*. 3. *Polygastric animalcules*. 4. *Acalephæ*. 5. *Parenchymatous entozoa*.

As there are but few animals in this division requiring notice, we shall adhere to Cuvier's arrangement of them.

CLASS I. ECHINODERMATA. (*εχινος*, sea-urchin, and *δερμα*, skin.) (CLASS XV. of General Division.)

These derive their name from the Echinus, or sea-urchin, whose skin is usually covered with spines or thorns. They possess a distinct intestine floating in a large cavity, and accompanied by several other organs for generation, respiration, and a partial circulation.

CLASS II. INTESTINALIA. (Cuv.) ENTOZOA. (Rudolphi.) (εντος, intus, within, and ζοον, animal.) *Intestinal worms.* (CLASS XVI. of General Division.)

The greater number of these inhabit the interior of other animals, and there only can propagate. There is scarcely an animal that is not the domicile of several kinds, and those which are observed in one species, are rarely found in others. They not only inhabit the alimentary canal, and the ducts that empty into it, such as the hepatic vessels, but even the cellular tissue, and the parenchyma of the most completely invested viscera, such as the liver and brain. They have neither vessels, even for a partial circulation, nor respiratory organs; they must, therefore, receive the influence of oxygen through the medium of the animal they inhabit. Their body is generally elongated or depressed, and their organs are arranged longitudinally.

ASCARIS LUMBRICOIDES (Gmel.) *The Long Round Worm.*

This worm is about the thickness of a goose-quill, and from twelve to fifteen inches long. It is generally of a brownish-red colour, but varies according to the aliments with which it is filled. The head is distinguished from the rest of the body by a circular depression, and it is furnished with three tubercles or valves found in no other entozoa. These worms usually occur in the small intestines of man. The cabbage-tree bark (*Geoffroya inermis*) has been recommended for their expulsion.

ASCARIS VERMICULARIS. (Gmel.) *The Maw, or Thread Worm.*

This, which is commonly known as the *Ascaris*, is a small worm, the female being four or five lines in length, and the male only a line or a line and a half. The body is thread-like, very elastic, and of a faint yellow colour. They inhabit the intestines of children, even of those newly born, especially the rectum.

ECHINOCOCCUS HOMINIS. (Rudol.) *The Hydatid.*

The *Hydatid* is a spherical body, consisting of one, and sometimes of two membranes, enclosing a fluid, most commonly limpid and transparent, but which is sometimes found of a tough, hard, and opaque consistence. On the inner coat of the membrane are attached a number of small granular bodies, which are called *echinococci*. Rodolphi divides the hydatids into *viventes*, and *non viventes*. He denies the vitality of the hydatid, properly so called, and supposes that the small granular bodies, or *echinococci* only, which cover the internal surface of the membrane, are endowed with life.

Others, however, consider the whole vesicle as a distinct animal. Hydatids have been found in all the textures and cavities of the human body, except the intestinal canal. There are species peculiar to the sheep, the ox, the pig, &c.; their presence in the last gives rise to the condition in pork commonly called *measley.*

FASCIOLA HUMANA. (Gmel.) *The Liver Fluke.*

This worm is three or four lines in length, of an oblong ovate shape, obtuse at each extremity, and of a dirty whitish or brown colour. It is formed in the gall-bladder, and according to Dr. Bremser, in the liver of man. It is said to be common in sheep, and to cause the disease called *rot* in those animals.

FILARIA MEDINENSIS. (Gmel.) *The Guinea-worm.*

It is of the thickness of a violin string, tapering a little at the tail, which is slightly curved, and several feet in length. Its colour is white. It occurs only among the inhabitants of Africa and the southern parts of Asia, and is found in the cellular tissue below the integuments, exciting intolerable itching, swelling, pain, and ultimately suppuration, in the part, accompanied with fever. It is generally coiled up circularly, and may be felt on pressure being made with the finger. When the tumour breaks, and the head of the worm protrudes, it is cautiously pulled, day after day, until the whole is extracted.

STRONGYLUS GIGAS. (Rudol.) *The Large Strongyle.*

This species varies in length from five inches to three feet, and in diameter from two to six lines. The body is slender, cylindrical, tapering towards each extremity, and composed of annular rings. The female is larger than the male. It is found in the kidneys, and has frequently been passed by the urethra. It is said to be met with in many of the lower animals as well as in man.

TÆNIA SOLIUM. (Gmel.) *The common Tape-worm.*

This is the species of tape-worm most common in the inhabitants of this country. It consists of a series of articulations, forming a flattened, riband-like worm, which varies in length from three to fifteen or twenty feet. In this species the articulations are somewhat irregular, being transverse, oval, rhomboidal, or quadrangular, wrinkled transversely, and having marginal pores, sometimes on one side, and sometimes on the other. The mouth is situated on the anterior part of the head; it is a small orifice, and when viewed with a microscope, exhibits a projecting margin, surrounding an excavation of a striated appearance. On the head there are four orifices, which are supposed to be suckers, by which the worm adheres to the intestines. This worm is more frequent in adults than in children. It occupies the small intestines, especially of females. This species was formerly supposed to be solitary, and hence the specific name *solium*; it is now, however, found to be gregarious, two or three generally occurring in the same individual.

Tænia vulgaris. (Gmel.) *The Broad Tape-worm.*

In this species the articulations are generally broader than long, of an oblong square form, and studded with minute papillæ. On the flattened surface, near the edge of each of these joints, there are one or two small round openings or pores, surrounded by the oviducts, which are disposed in the form of a star. The tail is generally round and simple, but sometimes bifurcated. It infests the small intestines of the inhabitants of Poland, Russia, Switzerland, and some parts of France, but is rarely found in this country.

Trichocephalus hominis. (Gmel.) *The Long Thread-worm.*

When full grown, this worm is about two inches long, and of a pale yellowish colour. The anterior end is capillary, and double the length of the posterior. This species was first discovered in 1761, by Rhœder, at Göettingen, in the bodies of some French soldiers who had died of a contagious disease. It is found chiefly in the cœcum, and is generally more numerous in infants than in adults. Rudolphi found more than a thousand in one individual.

CLASS III. ACALEPHA. (ακαληφη, a nettle.)

(Class XVII. of General Division.)

These have neither circulatory nor respiratory organs; their form is circular and radiating; in general the mouth holds the place of the anus; they differ from polypi only in possessing more development in the tissue of their organs.

CLASS IV. POLYPI. (πολυς, many, and πους, foot.)

(Class XVIII. of General Division.)

These are small gelatinous animals, whose mouth. surrounded by tentacula, leads into a stomach, which is sometimes simple, sometimes followed by intestines in the form of vessels; it is in this class that we find those numberless compound animals with a fixed and solid stem, which were for a long time considered to be marine plants. The various species of coral, and the sponge, belong to this class.

ANTIPATHES SPIRALIS. (Lamarck) *Black Coral.*

This species of coral is branched, and has a cortical covering, which is so soft that it entirely decays after death. The dried coral has the appearance of a branch of dry wood. It was formerly used in medicine.

CORALIUM RUBRUM. (Lamarck) *Isis nobilis.* (Linn.) *Red Coral.*

Its general appearance is that of a small shrub, which is found fixed by its base to submarine rocks and other bodies, and, it is said, always in a pendant or reversed position. It is principally obtained in the Indian or Mediterranean seas. The branches seldom exceed three feet in height, and about two inches in diameter. In the recent state, the stem and branches are covered with a soft cortical substance, or epidermis, which is the habitation of numerous small, whitish, soft, semi-transparent polypi. The coral consists principally of carbonate of lime and magnesia, with a small quantity of oxide of iron.

CORALLINA OFFICINALIS. (Linn., Gmel.) *Coraline, or Sea-moss.*

This marine production is found in the Mediterranean and other seas, attached to rocks and shells. It consists of several slender, articulated stems, subdivided into fine ramifications, and has some resemblance to certain mosses, among which, indeed, it was placed by Tournefort. When fresh it has a greenish or reddish colour, but from exposure to the air becomes nearly white. Like coral, it consists principally of carbonate of lime. It was formerly used in medicine.

Although the corallines have been classed among the animal creation by Cuvier, Lamarck, and others, yet they are said to be proved by microscopical examination to possess the cellular structure appertaining to vegetable organization, and are, therefore, placed by many naturalists among the vegetables.

MADREPORA. (Linn.) *Madrepore.*

Some of the species of madrepore has been known under the name of *White coral.* It occurs sometimes branched, sometimes in rounded masses, in slender filaments, or foliaceous; but it is always furnished with a lamellar covering, the divisions of which are joined concentrically, so as to form star-like points, or sometimes lines of a more or less serpentine figure.

SPONGIA OFFICINALIS. (Linn.) *The Officinal Sponge.*

Sponge, in the state in which it is met with in commerce, is a soft, light, elastic, and very porous substance, which readily absorbs liquids into which it is immersed, and yields them up again on compression. It may be considered as the skeleton of an animal, from which the soft gelatinous part representing the flesh has been removed at the time of its collection. In the living state, it is found attached by its base to rocks at the bottom of the sea. It occurs in the Indian, American, and Norwegian seas, and the Mediterranean. The best sponges are brought from the Grecian Archipelago, and are called *Turkey sponges.* An inferior kind is brought from the West Indies, and is called *West India*, or *Bahama sponge.* Sponge is extensively used for various domestic purposes; the ashes resulting from its combustion in close vessels have also been used in medicine, on account of a small portion of iodine which they contain.

CLASS V. INFUSORIA. (CLASS 19 of General Division.)

The term INFUSORIA has been applied to numerous minute animals found in water. They are also called animalcules. It has been ascertained by the microscope that a drop of water, though appearing to the naked eye perfectly clear, is sometimes swarming with living beings. Ehrenberg, to whom we are chiefly indebted for our knowledge of these animalcules, has described species not larger than from one thousandth to one two-thousandth of a line in diameter, and which are separated from one another by intervals not greater than their own size. A cubic inch of water may thus contain more than 800,000 millions of these beings, estimating them only to occupy one-fourth of its space; and a single drop, measuring a line in diameter, placed under the microscope, will be seen to hold 500 millions. Linnæus, not being acquainted with the structure of these minute animals sufficiently well to enable him to distribute them according to their relations in his several classes, placed them at the end of his last class Vermes, in a genus to which he gave the name of *chaos.* Müller first separated them as a distinct order, and gave them the name of *infusoria*, from the circumstance that the greater number of animalcules had been discovered in liquids, in which vegetable or animal matters had been dissolved by infusion. Müller based his arrangement of the different genera not on their varieties of structure, but on the differences of their external form. After some time Dr. Ehrenberg of Berlin directed his attention to the subject, and made numerous observations on the internal structure of these animals by means of feeding them with particles of colouring matter, which he diffused in the water containing them. Pure indigo was the substance he employed. By the use of these means he arrived at very interesting conclusions. He demonstrated by means of a powerful microscope the existence of distinct *digestive organs* in all the species. No distinct *muscular fibres* have been detected in the simpler or polygastric forms of infusoria, but in the rotiferous species they have. With respect to the other systems discoveries equally interesting have been made by Ehrenberg. This observer has separated from what he calls the true infusoria several families of animalcules formerly included in the same class. The principal genera so separated are the *Spermatozoa, Cerearia,* and *Vibrio,* which are now considered to belong to the class Entozoa. The true infusoria have been separated into two distinct divisions: the *Polygastrica,* and the *Rotifera,* or wheel animalcules.

Habitat. These animalcules are not only met with in water containing large quantities of organic matter in solution, but in common sea-water, stagnant fresh-water, and well-water exposed for a short time to the air.

Origin. It has been supposed that they are generated spontaneously; but as they never are observed in fluids secluded from the air, we may suppose that ova of extreme minuteness are always floating in the air, and only require a proper medium to develope themselves. These animals live on fine particles of animal and vegetable matter held in solution in water, and the larger species devour the smaller animalcules.

THE PRESERVATION OF ANIMAL SUBSTANCES.

Various processes are employed for preserving animal substances from undergoing decomposition.

1. *Drying in a stove or oven.* This is effected by the application of a temperature sufficient to cause the evaporation of all the moisture, without burning any of the external parts, or causing the juices to run out.

2. *The action of cold* is applied in the northern regions for the preservation of rein-deer tongues, fish, and other animal substances.

3. *Brine,* or *a solution of common salt,* is an efficient preservative agent. Dissolve one part of salt in two and a-half parts, by weight, of water, and immerse the meat or other animal substance in this solution, placing a board on the surface of the liquor, loaded with a lump of salt, so as to ensure the entire submersion of the animal matter, and at the same time to keep up the strength of the brine by the solution of more salt to compensate for the dilution caused by the animal juices. After the animal substance has remained in the brine for three or four days, it is to be taken out and dried, by rubbing it with bran or pollard, or with dry salt; and it may then be packed in barrels with intermediate layers of large grained salt, if intended for long keeping, or it may be hung up in a smoking-room. The addition of one ounce of saltpetre to each pound of salt will tend to preserve the red colour of the meat, and the further addition of a small quantity of brown sugar, is said to improve its flavour.

The following pickle has been recommended for preserving meat, to which it is said to give a mild and excellent flavour :—

℞. Brown sugar,
Bay salt,
Common salt, of each ℔ij.
Saltpetre ℔ss.
Water, cong. ij. Mix.

4. *Packing in dry salt,* is a mode of preservation sometimes resorted to. For this purpose salting-tubs are used, having false bottoms perforated with holes. A layer of coarse-grained salt is first made, and then alternate layers of meat and salt.

After a week or ten days the meat is taken out and again repacked with more dry salt. Sometimes the dry salt is merely rubbed into the meat.

5. *Bucaning meat* is a rude kind of smoking practised by hunters in the forests. Forked branches of trees are stuck in the ground, and by this means a grating of rods, two or three feet high, is made. The flesh to be preserved is cut into thick slices, and placed on this grating, while a fire is lighted underneath, so that the meat is rendered fit for keeping, partly by drying and partly by smoking it.

6. *Jerking meat, or charqui,* is a method sometimes resorted to in hot climates. It consists in cutting the lean part of meat into thin slices, and exposing these to the full action of the sun, turning the pieces when necessary until perfectly dried. The dried pieces are then pounded in a mortar and put into pots.

7. *Olive Oil* is sometimes used to preserve fish and other animal substances. Jars into which the substances to be preserved are put, are made quite full with the oil, and are then well closed, and the covers cemented down.

Alcohol is the agent most frequently employed for the preservation of animal preparations for museums, &c. When used alone, it is subject to the objection of its causing the contraction and hardening of the finer parts of animal substances, but this effect may be counteracted, at least in part, by the addition of a small quantity of ammonia. A mixture of equal parts of rectified spirit, sp. gr. 838, and of water, may be used in ordinary cases, but the strength of the spirit must be regulated in some degree by the quantity of fluids contained in the animal substance.

9. *Solution of Corrosive Sublimate* is often used for the preservation of animal substances, but it renders them very hard. It is advantageously employed for dry preparations, and tends especially to protect them from the attacks of insects. It may either be used by injection or by rubbing it over the surface. For the former mode of applying it, solution in water answers best; for the latter mode, solution in spirit.

10. *Alum* preserves animal substances very well for a certain time, but bones are attacked by it. A solution of one ounce of alum in eight ounces of water, when injected into veins and arteries, renders them capable of resisting decay for a long time. In the process of tawing skins, hereafter to be described, alum is used.

11. *Goadby's solution* is a good substitute for alcohol, and has been found to answer well in a variety of cases. The following are Mr. Goadby's formulæ:—

A 1.

℞. Bay salt ℥iv., alum ℥ij., corrosive sublimate gr. ij., water Oij. Mix.

A 2.

℞. Bay salt ℥iv., alum ℥ij., corrosive sublimate gr. iv., water Oiv. Mix.

B.

℞. Bay salt ℔ss., corrosive sublimate gr. ij., water Oij. Mix.

BB.

℞. Bay salt ℔ss., arsenious acid gr. xx., boiling water Oij. Boil until solution is effected.

C.

℞. Bay salt ℔ss., arsenious acid gr. xx., corrosive sublimate gr. ij, boiling water Oij. Boil until solution is effected.

The solution A 1, is that which Mr. Goadby usually employs. A 2, is used in those cases where there is a tendency to mouldiness, and where the animal texture is tender, for the salt, if in too great quantity, sometimes destroys the tissue. B, is used in cases where the animal substance contains carbonate of lime, as in those cases alum effects a decomposition. BB, is intended for old preparations; and C, for preparations of this kind in which there is a tendency to a softening of the parts. Professor Owen has found these solutions to answer better than alcohol for the preservation of nervous matter, and has employed them extensively in the museum of the College of Surgeons.

12. *Gannal's Solution* owes its efficacy to the presence of *Acetate of Alumina.* Its efficacy is similar to that of the solution of alum, and it is subject to the same inconvenience, arising from the action of the salt on some animal substances. It is made by dissolving one ounce of acetate of alumina in twenty ounces of water.

13. *Solution of Sulphate of Zinc* is used to preserve the muscles, teguments, and cerebral substances of vertebrata. It does not injure the bones, and does not become mouldy. It possesses the singular property of destroying all the parts of caterpillars but the teguments, and is therefore well adapted for the preservation of those larvæ which are not naked.

14. *Solution of Salammonic*, or *Chloride of Ammonium*, has been found to preserve the muscular substance of mammaliæ. The solution is made in the proportion of one part of the salt to ten parts of water.

15. *Solutions of Nitrate of Potash*, and of *Persulphate of Iron,* are effective preservative agents, but they change the

colour of the preparations, and the iron salt attacks the bones.

16. *Naphtha mixed with water*, in the proportion of one part of the former to seven of the latter, is said by Mr. Babbington to be a good antiseptic.

17. *Kreosote* preserves animal matter well, but renders the preparations brown. Sixteen drops of kreosote may be mixed with one ounce and a half of water.

18. *Essential Oils* are good preservatives of all parts but the fat, which they dissolve. Oil of turpentine is one of the best. They render many parts transparent if previously dried, which is sometimes advantageous.

19. *The process of Tanning* is applied to the skins of animals, with the view of preserving and hardening them, and rendering them more fit for some economical purposes. This process consists in soaking the skins, from which the hair and grease have been previously removed by the application of lime, in a solution of tannic acid, together with some extractive matters derived from the barks of certain trees, more especially of the oak.

20. *The process of Tawing* is also applied for a similar purpose. It consists in first soaking the skins in water with fresh slaked lime for several weeks, the water being changed two or three times during this period. The skins are then taken out and rinsed, and again soaked in water with wheat bran. After this, a paste is made as follows:—Eight pounds of alum and three pounds of common salt are dissolved in hot water; to this is added twenty pounds of wheat flour, and the yolks of about one hundred eggs, so much water being used as shall form a thin paste. A portion of this paste being diluted with water, the skins are soaked in the mixture, and pulled and stretched from time to time, and subsequently dried.

21. *Acids* are frequently required to dissolve the calcarious parts of animals, such as bones, shells, &c. Hydrochloric or nitric acid, diluted with four or five parts of water, may be used for these purposes.

22. *Alkalies* serve to convert grease into soap, to render it capable of drying, and to make the preparations cleaner.

1. *Weak Ley.*

℞.	Carbonate soda . . .	℥iv.
	Quick lime . . .	℥j.
	Water boiling . . .	Ov.

Add the lime to the soda dissolved in the water, stir, and pour off the clear liquor.

Greasy bones, where the medulla oozes out, may be placed in this for a week or two, and when they begin to whiten they are to be boiled for a quarter of an hour in the same ley, then well washed and dried. To saponify the spots of grease on the bones, cotton wool dipped in the ley should be laid on. The bones must not be left too long in the ley, as it will, after a time, attack the gelatine.

2. *Strong Ley.*

℞. Carbonate soda . . .	℥iv.
Quick lime . .	℥j.
Water boiling . . .	Oiiss.

Proceed the same as before.

23. *Injections.* The various injections used by anatomists may be conveniently divided into three classes, viz.:—1. Common injections; 2. Fine injections; and 3. Injections for corrosion. The first are used to fill large vessels. The following are some of the principal:—

COMMON INJECTIONS.

1. ℞. Tallow ℥xij., wax ℥v., olive oil ℥iij. Melt and mix.

2. ℞. Wax ℥xij., common turpentine ℥vj., tallow ℥iij., oil of turpentine ℥j. Melt and mix.

3. ℞. Spermaceti ℥ij., wax ʒj., common turpentine ℥j. A very penetrating injection.

FINE INJECTIONS.

These injections are used to trace the capillary vessels.

1. ℞. Gelatine ℥xij., water Ov. Mix with a gentle heat. In winter only ℥vij. of gelatine must be used.

2. ℞. Canada balsam, vermilion, q. s. Mix.

INJECTIONS FOR CORROSION.

1. ℞. Bismuth ℥viij., lead ℥v., tin ℥iij. Fuse together. (*D'Arcet's.*)

2. ℞. Resin ℥viij., wax ℥x., common turpentine ℥xij. Melt together.

3. ℞. Wax ℥xvj., resin ℥viij., turpentine varnish ℥vi., vermilion ℥iij. Melt together. (*Mr. Knox's.*)

VEGETABLES YIELDING PRODUCTS

EMPLOYED IN

MEDICINE, DOMESTIC ECONOMY, AND THE ARTS.

CLASSIFICATION OF PLANTS.

Among the several kinds of classification which have been adopted by different botanical writers, that of De Candolle has, perhaps, been received with the most general approbation. The arrangement of plants which that distinguished botanist has made in his Prodromus, so far as that work, which is not yet completed, extends, will be followed here. The vegetable kingdom is first arranged in two great divisions:—

1. *The Vascular,—Phanerogamous*, or *Flowering Plants;* and
2. *The Acrogens,—Acotyledons, Cellular, Cryptogamic*, or *Flowerless Plants.*

The flowering plants, which have spiral vessels, and distinct flowers and sexes, are again divided into *Exogens*, or *Dicotyledonous Plants;* and *Endogens*, or *Monocotyledonous Plants.*

Exogens, are plants whose *leaves* have reticulated or branched nerves, forming a sort of net-work; the *stems*, when cut across and examined, are found to consist of central pith, wood, and bark, and from the centre to the circumference there are fine lines, called medullary rays; they *increase with growth*, by the deposition of layers of wood beneath the bark, and there are found to be as many concentric circles of wood, in the trunk of a tree of this kind, as the plant is years old; the *flowers* usually have a quinary division; and the *embryo* of the seed has two or more cotyledons, opposite.

Endogens, are plants whose *leaves* have parallel veins; the *stems*, when cut across, present no distinction of pith, wood, bark, and medullary rays, but consist of confused bundles of woody fibre; they *increase with growth*, by depositions in the interior of the stems, hence these increase but little in thickness, and there is no appearance of concentric circles of wood; the *flowers* usually have a ternary division; and the *embryo* of the seed has but one cotyledon, or if two, they are alternate.

Acrogens, or Cryptogamic plants, have no *flowers*, properly so called; many of them are destitute of *leaves*, but if they have leaves, there are either no veins to them, or the veins are of the most simple kind, being either not branched, or if branched, dividing by repeated forking; they consist principally of *cellular tissue*, spiral vessels being for the most part absent; when they have *stems*, the wood is arranged in a sinuous or zigzag manner; the *sexual organs* being absent, they have no seeds or embryo; they are re-produced by bodies resembling seeds, and answering the same purpose, called *spores*, or *sporules*.

These distinctive characters, however, are not found always to apply as here indicated; so that a plant cannot be referred to either of the foregoing classes, with absolute certainty, from the presence of any one character, but only from a combination of characters. Thus, a plant may have one of the characters of a class to which it nevertheless does not belong, because its other characters are at variance with those appertaining to that class.

In estimating the value of the characters by which a plant should be referred to any particular class, they should be placed in the following order:—1st, *wood;* 2nd, *embryo;* 3rd, *leaves:* 4th, *flowers.* "The structure of the wood is of more importance than all the others, because it indicates a whole series of differently modified vital phenomena; the embryo is of more importance than the leaves, because it is the part which determines all the final structure of the plant; and the leaves are of more importance than the flowers, because they are intimately connected with the peculiar manner in which the wood of the stem is organised, and determine in the first instance the organisation of the flower itself." (*Lindley.*)

Exogens are divided by De Candolle into four sub-classes:—1. *Thalamifloræ;* 2. *Calycifloræ;* 3. *Corollifloræ;* 4. *Monochlamydeæ.*

Sub-class 1. *Thalamifloræ.* Flowers furnished with both a calyx and corolla.

Perianth double. Calyx polysepalous. Petals distinct, together with the stamens inserted on the receptacle (thalamus) not attached to the calyx.

Examples. Ranunculus. Papaver. Sinapis.

Sub-class 2. *Calycifloræ.* Flowers furnished with both a calyx and corolla. Perianth double. Calyx gamosepalous. Petals distinct, or more or less united at the base, inserted into the calyx together with the stamens.

Examples. Rhamnus. Glycyrrhiza. Rosa.

Sub-class 3. *Corollifloræ.* Flowers furnished with both a calyx and corolla. Petals cohering in the form of a monopetalous corolla, bearing the stamens, and inserted on the receptacle (thalamus).

Examples. Gentiana. Convolvolus. Mentha.

Sub-class 4. *Monochlamydeæ.*

Perianth single; petals incorporated with the calyx or entirely wanting.

Examples. Rheum. Laurus. Quercus.

Endogens are divided into two sub-classes:—1. *Petaloideæ;* 2. *Glumaceæ.* The Prodromus has not reached this class.

Sub-class 1. *Petaloideæ.*

Calyx and corolla both present, in three or six divisions; or imperfectly developed in the form of herbaceous scales upon a spadix.

Examples. Crocus. Allium. Scilla.

Sub-class 2. *Glumaceæ.*

Perianth usually absent, its place occupied by herbaceous or scariose bractæ, imbricated over each other; if present, surrounded by such bractæ.

Example. The Grasses.

Cryptogamic plants are arranged in three classes:—

Class 1. Filicoideæ.—*The Ferns.*

Class 2. Muscoideæ.—*The Mosses.*

Class 3. Fungoideæ.—*The Fungi, Lichens, Algæ.*

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* Plants which have an asterisk prefixed to the name, grow wild in this country.

** Plants which have two asterisks prefixed to the name, are commonly cultivated in this country, but are not natives.

DIVISION I.

VASCULARES; PHANEROGAMIA; or FLOWERING PLANTS.

CLASS I. EXOGENÆ. SUB-CLASS I. THALAMIFLORÆ.

ORDER 1.—RANUNCULACEÆ.

(De Cand. Prod. t. i. p. 2. Lindl. Nat. Syst., Ed. 2, p. 5.)

Herbaceous plants with alternate or opposite leaves, generally much divided, with a dilated petiole. *Sepals* 3—6, hypogynous, deciduous; *petals* 3—15; hypogynous; *stamens,* hypogynous, indefinite in number; *anthers* adnate; *pistils* numerous, seated on a torus; *carpels* capsular, baccate, or follicular, one or many seeded; *seeds* albuminous; *albumen* corneous; *embryo* minute.

Plants acrid; many are poisonous.

ACONITUM. (De Cand. i. 56.)

ACONITUM ANTHORA. *Anthora, Antithora, Wholesome wolfsbane, Yellow helmet flower.* Mountainous parts; Europe, Siberia.

Roots cordial. (G.) Root extremely poisonous, similar in action to that of Aconitum napellus. (L.)

ACONITUM FEROX. Himalaya Mountains.

Root exceedingly poisonous, fatal either when taken internally, or when applied to wounds. Used by the Indian practitioners in cases of chronic rheumatism.

ACONITUM HETEROPHYLLUM. (Wallich.) *Atees.* India.

Root used in Indian medicine as a tonic, and aphrodisiac. (O'Sh.)

ACONITUM LYCOCTONUM. *Great yellow wolfsbane.* Various parts of Europe.

Root poisonous, occasioning vertigo, stupor, and spasm; has been employed to kill wolves.

*ACONITUM NAPELLUS. (E. B. t. 2730.) *Early blue wolfsbane.*

Fl. purple. June, July. Perennial. Various parts of Europe.

ACONITUM CAMMARUM. ACONITUM NEOMONTANUM.

These are considered by De Candolle as varieties of *Aconitum napellus.*

These plants are used indiscriminately for each other, and are exceedingly poisonous. The roots are more active than the leaves; both parts are employed in medicine. Given in doses of one grain gradually increased, they are narcotic, powerfully diaphoretic, and diuretic. The extract and aconitine are used externally in chronic rheumatism, gout, paralysis, dropsy, &c.

ACONITUM PANICULATUM. *Panicled Wolfsbane.*

This is the species ordered in the Lond. Pharm. 1836; but *Aconitum napellus* is generally supplied by the herbalists in London. *Aconitum paniculatum* is said by some persons to be inactive.

ACTÆA. (De Cand. i. 64.)

ACTÆA CIMICIFUGA *Cimicifuga fœtida.* Siberia.

Root antispasmodic.

*ACTÆA SPICATA. (E. B. t. 918.) *Bane berries, Christophoriana. Herb christopher.* Fl. white. May. Perennial. Europe.

Vulnerary, astringent; juice of the berries affords a deep black dye.

ACTÆA RACEMOSA. North America.

Root infused in spirit used in rheumatic pains, and also in astringent gargles. This is the *Cimicifuga serpentaria* of the P. U. S., the root being employed instead of rattle-snake root.

ADONIS. (De Cand. i. 23.)

*ADONIS VERNALIS. *Bird's eye.*

*ADONIS AUTUMNALIS. (E. B. t. 308.) *Pheasant's eye, Red morocco.*

Fl. scarlet. May to October. Annual. Europe, Siberia.

Astringent, roots bitter.

ANEMONE. (De Cand. i. 16.)

ANEMONE CERNUA. *Hak too woo* of the Chinese. Japan.

Root much used among the Chinese and Japanese, as a bitter medicine.

*ANEMONE NEMOROSA. (E. B. t. 355.) *Wood anemone, Wood crowfoot.*

Fl. white, or with a shade of purple. April, May. Perennial.

ANEMONE SYLVESTRIS. *White wood anemone.*

ANEMONE PRATENSIS.

ANEMONE VERNALIS. *Yellow anemone.* Europe and Asia.

Plants acrid, caustic, and ulcerating; used in gout and rheumatism; when chewed they act as sialogogues. Fl. poisonous.

*ANEMONE PULSATILLA. (E. B. t. 51.) *Pasque flower, Pulsatilla.*

Fl. purple. May. Perennial. Europe, Siberia.

Root acrid, sternutatory; leaves detersive.

AQUILEGIA. (De Cand. i. 50.)

*AQUILEGIA VULGARIS. (E. B. t. 297.) *Columbine.*

Fl. purple. June. Perennial. Woods and coppices.

Herb, flower, and seeds opening, acrid, diuretic, and used in detersive gargles.

CALTHA. (De Cand. i. 44.)

*CALTHA PALUSTRIS. (E. B. t. 2175.) *Marsh marygold.*

Fl. yellow. March, June. Perennial. Marshy places.

Herb acrid, caustic; useful externally in diseases of the reins or loins.

CLEMATIS. (De Cand. i. 2.)

CLEMATIS DIOICA. Jamaica.

Leaves hot, and acrid; an infusion of the bruised leaves and flowers forms a good lotion for the skin.

CLEMATIS ERECTA.

CLEMATIS FLAMMULA. South of Europe.

Caustic, burning, used for issues and venereal ulcers; seeds drastic; leaves used outwardly in leprosy, internally, in inveterate syphilis.

CLEMATIS MAURITIANA. Madagascar and Isle of France.

Used as a vesicatory.

CLEMATIS SINENSIS. Cochin China.

Used in China as a diuretic and diaphoretic. (O'Sh.)

*CLEMATIS VITALBA. (E. B. t. 612.) *Traveller's joy.*

Fl. greenish white. May, June. Hedges, on chalky soils.

Bark and herb caustic, raising blisters; ophthalmic; young roots eaten as a pot-herb.

**CLEMATIS VITICELLA. *Clematis, Atragene alpina, Virgin's bower.* (Bot. Mag. 565.)

Fl. purple. June, September. Perennial. South of Europe.

Leaves used as a poultice in leprosy; seeds purgative.

COPTIS. (De Cand. i. 47.)

COPTIS TEETA. (Wallich.) *Golden thread root of Assam.* Assam.

Root intensely bitter, deemed in India a tonic remedy of the greatest value. (O'Sh.)

COPTIS TRIFOLIA. *Helleborus trifolius. Goldthread.* Canada and Siberia.

Root a pure bitter, used in thrush; leaves dye yellow.

DELPHINIUM. (De Cand. i. 51.)

**DELPHINIUM AJACIS, *Upright larkspur.*

Fl. blue. Annual. Native of Asia Minor.

DELPHINIUM ELATUM. *Siberian bee larkspur.*

*DELPHINIUM CONSOLIDA. (E. B. 1839.) *Consolida regalis, Delphinium, Larkspur.*

Fl. blue. June, July. Annual. Sandy or chalky cornfields. Europe, Asia, North America.

Root, *Delphinium*, P. U. S. Vulnerary, consolidating wounds, ophthalmic.

DELPHINIUM STAPHISAGRIA. *Staphisagria. Stavesacre.*

South of Europe, Levant, Canaries.

Seeds, *staphisagriæ semina*, acrid, nauseous; imported from Turkey; kill lice and rats; purge violently, in doses of gr. iij. to x.; used as a masticatory in tooth-ache, and also in apophlegmatizant gargles.

FICARIA. (De Cand. i. 44.)

FICARIA RANUNCULOIDES. (E. B. t. 584.) *Chelidonium minus, Ficaria verna, Ranunculus ficaria, Lesser celandine, Pilewort.*

Fl. yellow. April, May. Perennial.

Juice of root acrid, styptic; useful in piles, being weakened with wine or beer; leaves caustic, but mild, and eaten in Sweden, according to Linnæus.

HELLEBORUS. (De Cand. i. 46.)

*HELLEBORUS FŒTIDUS. (E. B. 613.) *Helleboraster maximus, Great Bastard bearsfoot, Setter wort.*

Fl. green, tipped with purple. April. Perennial. Thickets, &c.

The leaves are emetic and purgative. The juice, obtained by moistening the bruised leaves with vinegar, and then pressing, has also been used. They have been strongly recommended as a vermifuge for the large round worm. (Ascaris lumbricoides.)

**HELLEBORUS NIGER. (Bot. Mag., 8.) *Elleborus niger, Melampodium, Black hellebore, Christmas rose.*

Fl. white. January. Perennial. Native of the south of Europe.

The fibres of the rhizome are the parts used in medicine. Nauseous, and violently purgative both to man and horse, anthelmintic, diuretic, and emmenagogue; also used as an exutory in cattle to keep open issues.

HELLEBORUS ORIENTALIS? *East Indian black hellebore.* Greece and the Levant.

Roots very different from the European; qualities the same.

*HELLEBORUS VIRIDIS. (E. B. 200.) *H. hyemalis, Wild black hellebore, Bearsfoot.*

Fl. light green. April. Perennial. Woods, &c., in chalky soil.

Qualities the same as black hellebore.

HEPATICA. (De Cand. i. 22.)

**HEPATICA TRILOBA. (Bot. Mag. 10.) *Anemone hepatica, Hepatica nobilis, Trifolium aureum, Hepatica.*

Fl. purple or pink. March. Perennial. Native of the south of Europe.

Aperitive, vulnerary, useful in diabetes and dysentery; leaves detergent; in diseases of the skin or in gargles.

HYDRASTIS. (De Cand. i. 23.)

HYDRASTIS CANADENSIS. United States and Canada.

Root, *Canada yellow root.* Bitter, used for calumba; gives out a most beautiful yellow colour.

KNOWLTONIA. (De Cand. i. 23.)

KNOWLTONIA VESICARIA. Cape of Good Hope.

Used as a vesicatory.

MYOSURUS. (De Cand. i. 25.)

*MYOSURUS MINIMUS. (E. B. t. 435.) *Mouse tail.*

Fl. yellow. June. Annual. Corn fields, &c.

Astringent, roots bitter.

NIGELLA. (De Cand. i. 48.)

NIGELLA SATIVA. *Fennel flower, Devil in a bush, Gith, Nigella.*

NIGELLA ARVENSIS. NIGELLA INDICA. South of Europe, &c.

Seeds acrid, oily, attenuant, opening; used as a spice.

PŒONIA. (De Cand. i. 65.)

**PŒONIA OFFICINALIS. (Bot. Mag. t. 1784.) *Peony.*

Fl. crimson, generally double. June. Perennial. Native of the south of Europe.

Roots and seeds antiepileptic, emmenagogue. (G.) Seeds emetic and cathartic; root believed to be antispasmodic. (O'Sh.)

RANUNCULUS. (De Cand. i. 26.)

**RANUNCULUS ACONITIFOLIUS. (Bot. Mag. 204.) *Bachelor's buttons.*

Fl. white. May, June. Perennial. Native of the Alps. Herb used to cure intermittents, by being applied to the wrists.

*RANUNCULUS ACRIS. (E. B. 652.) *Buttercups, Upright meadow crowfoot.*

Fl. yellow. June, July. Perennial. Meadows, &c.

Very acrid. Root used, when dry, as a febrifuge in intermittents.

*RANUNCULUS AQUATILIS. (E. B. 101.) *Water crowfoot.*

Fl. White. May, June. Perennial. Ditches and rivers.

*RANUNCULUS ARVENSIS. (E. B. 135.) *Corn crowfoot.*

Fl. yellow. Annual. Corn-fields.

Very acrid and poisonous, but eaten by animals in some countries.

*RANUNCULUS AURICOMUS. (E. B. 624.) *Wood crowfoot.*

Fl. yellow. April, May. Perennial. Woods and coppices.

Less acrid; used while young as a potherb. By drying, most of the ranunculi lose their acridness.

*RANUNCULUS BULBOSUS. (E. B. 515.) *Bulbous crowfoot, Round root crowfoot.*

Fl. yellow. May. Perennial. Meadows, &c.

Very acrid; kills rats, but not sheep; root used as a vesicatory; yields a nutritive fæcula.

*RANUNCULUS FLAMMULA. (E. B. 387.) *Ranunculus flammeus minor, Lesser spear wort.*

Fl. yellow. June, August. Perennial. Moist places.

*RANUNCULUS LINGUA. (E. B. 100.) *R. flammeus major, Great spear wort.*

Fl. large, yellow. July. Perennial. Marshes and ditches. Very acrid, cauterise the skin, poisonous to man and horse.

RANUNCULUS GLACIALIS. France and north of Europe. Called by the mountaineers of Dauphiny *Carline*, or *Caraline;* the infusion in hot water, is employed by them as a powerful sudorific in colds and rheumatism.

RANUNCULUS MONTANUS. *White flowered crowfoot.*

South of Europe.

Properties similar to those of R. aconitifolius.

*RANUNCULUS REPENS. (E. B. 516.) *Creeping crowfoot, Crowfoot.*

Fl. yellow. June, October. Perennial. Pastures.

Herb, used as a potherb while young.

*RANUNCULUS SCELERATUS. (E. B. 681.) *R. palustris, Celery-leaved crowfoot, Marsh crowfoot.*

Fl. yellow. June. Perennial. Ditches and sides of pools. Very acrid and poisonous; sometimes eaten by animals.

RANUNCULUS THORA. *Thora, Alpine crowfoot.* Alps of Europe.

Root extremely acrid and poisonous; the juice has been employed to poison weapons with fatal effect.

THALICTRUM. (De Cand. i. 11.)

THALICTRUM ANGUSTIFOLIUM.

THALICTRUM AQUILEGIFOLIUM.

Root and herbs bitter, purgative, diuretic; useful in old ulcers and the jaundice.

*THALICTRUM FLAVUM. (E. B. 367.) *Pseudo rhabarbarum, Spanish meadow rue, Common meadow rue.*

Fl. yellow. July. Perennial. Moist meadows.

*THALICTRUM MAJUS. (E. B. 611.) *English rhubarb, Greater meadow rue.*

Fl. yellow. Perennial. Stony pastures in north of England.

Roots of both of these substituted for rhubarb; a double dose required.

*THALICTRUM MINUS. (E. B. 11.) *Lesser meadow rue.*

Fl. yellow. June, July. Perennial. Stony pastures.

Qualities similar to those of T. angustifolium.

TROLLIUS. (De Cand. i. 45.)

*TROLLIUS EUROPÆUS. (E. B. 28.) *Ranunculus globosus, Globe crowfoot, Locker gowans, Mountain globe flower.*

Fl. yellow. June, July. Perennial. Moist mountain pastures.

TROLLIUS ASIATICUS. Europe and Siberia.

Very acrid; must be used with caution.

ZANTHORIZA. (De Cand. i. 65.)

ZANTHORIZA APIIFOLIA. Southern parts of United States.

Root, *Yellow root. Zanthoriza, P. U. S.*, extremely bitter; bitterness very permanent; makes a yellow lake. (G.) A valuable tonic medicine. (O'Sh.)

ORDER 2. DILLENIACEÆ. (De Cand. i. 67.)

Parts of the flowers disposed in fives; *sepals* five, persistent, two exterior, three interior; *petals* five, deciduous, in a single row, hypogynous; *stamens* numerous, arising from a torus; *filaments* thread shaped, dilated either at the base or apex; *anthers* adnate, usually bursting longitudinally, always turned inwards; *carpels* from two to five, either distinct, or cohering together, with a terminate style, and simple stigma, either baccate or two valved; *seeds* fixed in a double row to inner edge of carpels, either many or only two, sometimes solitary by abortion, surrounded by a pulpy aril; *testa* hard; *embryo* minute, lying in the base of solid fleshy albumen. *Trees* or *shrubs* with alternate *leaves*, rarely opposite, and solitary *flowers* in terminal racemes, or panicles, often yellow.

CURATELLA. (De Cand. i. 70.)

CURATELLA CAMBAIBA. (Lindl.) *Cambaiba.* Brazil.

Astringent; decoction used in Brazil as an application to wounds.

DAVILLA. (De Cand. i. 69.)

DAVILLA BRASILIANA. *Davila rugosa, Cipo di carijo, Cambaïbinha, Cipo de caboclo.* Forests of Brazil.

Astringent; decoction used in Brazil in swellings of the legs and testicles.

DAVILLA ELLIPTICA. (Lindl.) *Cambaïbinha.* Brazil.

Astringent.

DILLENNIA. (De Cand.)

DILLENIA SPECIOSA. Malabar, Celebes.
DILLENIA ELLIPTICA. Malabar, Celebes.

Fruits used to acidulate cooling drinks.

ORDER 3. MAGNOLIACEÆ. (De Cand. i. 77.)

The parts of the flowers disposed in threes. *Sepals* 3—6, deciduous: *petals* 3—27, in many rows, hypogynous; *stamens* numerous, free, inserted on the torus beneath the ovaries; *anthers* adnate, long; *ovaries* numerous, simple, arranged upon the torus above the stamens, generally in a spike; *styles* short; *stigmas* simple; *carpels* equal in number to the ovaries, one celled, one or many seeded, either dehiscent, or indehiscent, in some follicular or subcarnose, in others samariform, aggregate, or partially united into a loose or dense strobilus; *seeds* solitary, or many, attached to the inner edge of the carpels; *albumen* fleshy; *embryo* minute, at base of albumen. Fine *trees* or *shrubs*, with alternate *leaves; flowers* large, handsome, often strongly odoriferous. The bark of these trees is bitter, astringent, or aromatic.

DRIMYS. (De Cand. i. 78.)

DRIMYS GRANATENSIS.

DRIMYS MAGNOLIÆFOLIA, and two other species not well known. America.

Bark, slightly bitter, very acrid, heating and aromatic.

DRIMYS WINTERI. *Winterana aromatica.* America.

Bark, *cortex Winteranus, Winter's cinnamon, Winter's bark;* thick, channelled across on the outside, grey; much cracked on the inside, solid, iron grey; sharp tasted, aromatic, very fragrant; used in scurvy, vomiting, and palsy. Rare at present, being not in such esteem as *Canella alba.*

ILLICIUM. (De Cand. i. 77.)

ILLICIUM ANISATUM. *Anisum stellatum, Star anise.* China.

Fruit, fine scented, stomachic, make excellent liqueurs; also burned as incense; yield an essential oil, *oleum badiani,* which resembles the common oil of anise, but remains fluid at a lower temperature.

ILLICIUM FLORIDANUM. Country north of the Gulf of Mexico.

Bark and leaves aromatic and spicy; the effects are similar to those of other aromatic barks.

Liriodendron. (De Cand. i. 82.)

**Liriodendron tulipifera. (Bot. Mag., 275.) *Tulip tree.* Fl. yellow. June. Large tree; native of North America.

Root and bark smell like essence of bergamot, and are used to flavour liqueurs; bark of the root (*Liriodendron, P. U. S.*) used in fevers; contains a bitter principle without tannin or gallic acid.

Magnolia. (De Cand. i. 79.)

Magnolia acuminata. *M. auriculata, M. glauca, M. grandiflora, M. tripetala,* (*Umbrella,* D. C.) America.

Bark febrifuge, used for the peruvian; flowers strongly scented, causing nausea, headache, and even fever.

Magnolia yulan. *Magnolia precia, Tsin-y, Yu-lan.* China.

Seeds bitter, febrifuge; flowers used in perfumery.

Michelia. (De Cand. i. 79.)

Michelia champsaca. *M. suaveolens, Champac.* India.

Flowers used in perfumery. (G.) Bark bitter and aromatic; has similar qualities to those of Magnolia acuminata. (O'Sh.)

Talauma. (De Cand. i. 81.)

Talauma plumieri. *Anona dodecapetala, Magnolia plumieri, Elephant wood.* West Indies.

Flowers distilled with spirit to make a spirituous liquor.

Order 4.—ANONACEÆ. (De Cand. i. 83.)

Sepals 3—4, persistent, usually partially cohering; *petals* 6, hypogynous, arranged in two rows, sometimes united in a monopetalous corolla; *stamens* numerous, packed closely together, covering a large hypogynous torus; *filaments* very short; *anthers* adnate, turned outwards, with an enlarged four-cornered connective, sometimes nectariferous; *ovaries* usually numerous, closely packed, separate, or cohering; *styles* short; *stigmas* simple *carpels* either succulent, or dry, one or many seeded, distinct, or concrete into a fleshy mass; *seeds* attached to the sutures in one or two rows, sometimes furnished with an aril; *testa* brittle; *embryo* minute, in the base of hard fleshy albumen. *Trees* or *shrubs,* with alternate simple *leaves; flowers* usually green or brown.

Anona. (De Cand. i. 83.)

Anona muricata. *Sour sop.* West Indies.

Root in decoction used against fish poison; fruit eatable; inner bark made into *bast.*

Anona palustris. *Alligator apple, Water apple.*

Anona reticulata. *Nettle custard apple.*

Anona squamosa. *Sweet sop.* West Indies.

Fruit esculent; imported from the West Indies, preserved in syrup.

Asimina. (De Cand. i. 87.)

Asimina triloba. North America.

Fruit fleshy; juice very acid.

GUATTERIA. (De Cand. i. 93.)

GUATTERIA VIRGATA, *Cananga virgata*, and some other species. Jamaica.

Fruits aromatic, very heating.

MOLLINEDIA.

MOLLINEDIA REPANDA.

Fruit yields a purple colour.

MOLLINEDIA OVATA.

Fruit yields a violet colour.

MONODORA. (De Cand. i. 87. Lindl. 28.)

MONODORA MYRISTICA, *Anona myristica*, *American nutmeg*. Jamaica, Africa.

Qualities similar to those of the nutmeg, but less pungent.

PORCELIA. (De Cand. i. 88.)

PORCELIA NITIDIFOLIA. Peru.

Fruit grateful, leaves yield a yellow colour.

UNONA. (De Cand. i. 88.)

UNONA ÆTHIOPICA, *Habzelia æthiopica*, *Uvaria æthiopica*. Sierra Leone.

Capsules, *Piper æthiopicum*, *Ethiopian pepper*, *Grains de zelim*, *Monkey pepper*, very aromatic.

UNONA AROMATICA. *Habzelia aromatica*. Guiana.

Fruit pungent, aromatic; employed by the blacks in the place of spice.

UNONA DISCRETA?

Fruit aromatic.

UNONA TRIPETALA. *Uvaria tripetaloidea*. Amboyna.

Yields a gum by incision.

UNONA XYLOPIOIDES. *Uvaria febrifuga*, *Xylopia longifolia*. Banks of the Orinoco.

Bark febrifuge, said to be superior to Peruvian bark. The fruit is found a valuable febrifuge on the Orinoco.

XYLOPIA. (De Cand. i. 92.)

XYLOPIA GLABRA. *Bitterwood*. Barbadoes and Jamaica.

Wood, bark, and berries, warm and bitter.

ORDER 5.—MENISPERMACEÆ.

Flowers sometimes unisexual, very often diæcious, and very small. *Sepals* and *petals* confounded in one or more rows, each of which is composed of either three or four parts, hypogynous, deciduous; *stamens* monadelphous, occasionally distinct, sometimes opposite the inner sepals, and equal to them in number, sometimes three or four times as many; *anthers* adnate, turned outwards; *ovaries* sometimes numerous, each with one style, sometimes cohering, and forming a many-celled body, occasionally by abortion, celled; *drupes* generally berried, one seeded, oblique, or lunate, compressed; *seed* of the same shape as the fruit; *albumen* very small; *embryo* curved, or turned in the direction of the circumference; *cotyledons* flat. *Shrubs*, with a flexible tough tissue, and sarmentaceous habit, with alternate, simple, rarely-divided *leaves;* and small, and usually racemose *flowers.*

Abuta. (De Cand. i. 103.)

Abuta candicans. *Liane amere.*

Abuta amara. *Bitter pariera.* Cayenne.

Roots bitter.

Abuta rufescens. *Menispermum abuta.* *Brown Pariera brava.* Cayenne and Guayana.

Same qualities as Cissampelos pariera.

Cissampelos. (De. Cand. i. 100.)

Cissampelos caapeba. *Liane a glacer l'eau, Timac?* West Indies.

A very powerful diuretic, in use among the negroes in Martinique, against bites of serpents.

Cissampelos glaberrima. *Brazilian Pariera.*

Cissampelos ovalifolia. *Orilha de onça.* Brazil.

Bitter; roots employed in Brazil in decoction as a cure for intermittent fevers.

Cissampelos pariera. *White Pariera brava, Velvet leaf.* West Indies, &c.

Trunk and root diuretic, very useful in obstructions, dropsy, or gravelly complaints. This is the true *Pareira brava.* (De Cand.)

Coculus. (De. Cand. i. 96.)

Coculus acuminatus. *Menispermum acuminatum.* Coromandel and Brazil.

Employed as an antidote to the bites of snakes.

Coculus cebatha. *Menispermum edule, Cabatha.* Arabia.

Berry esculent, but acrid, producing an intoxicating liquor by fermentation.

Coculus palmatus. *Menispermum palmatum.* Kalumbo, Mozambique.

Root. *Calumbæ radix, Calumbo root.* Bitter, aromatic, stomachic, anti-emetic, astringent; dose ʒss. frequently in a day; in transverse slices, one or two inches in diameter, and not half an inch thick, covered with a bark; imported from Mozambique in bags or cases.

Coculus bakis. C. burmanni. C. cordifolius. C. crispus (known by the name of *Funis felleus*). **C. epibaterium. C. fibraurea. C. platyphyllus. C. peltatus.** Also contain a bitter principle, and are used by the inhabitants of the East Indies, Africa, and South America, for the cure of intermittent fevers, liver complaints, and urinary affections.

Coculus suberosus. *Anamirta cocculus, Menispermum cocculus, Cocculus indicus.* Malabar, Indian Archipelago.

Capsules acrid, used to intoxicate fish, and to destroy vermin; also by brewers, to give a false strength to beer. Poisonous to all animals, and generally to vegetables also.

LARDIZABALA. (De Cand. i. 95.)

LARDIZABALA BITERNATA. Chili.

Berry esculent.

MENISPERMUM. (De Cand. i. 102.)

MENISPERMUM FENISTRATUM. *Pariera medica, Woniwol, Venivel*, or *Bangwellzetta.* Ceylon.

Infusion of the root used by the Cingalese as a stomachic.

MENISPERMUM LACUNOSUM.

Fruit used to intoxicate fish.

ORDER 6.—BERBERIDEÆ. (De Cand. i. 105.)

Sepals 3—4—6, oblong or oval, often somewhat coloured, arranged alternately in a double row, furnished externally with petaloid scales; *petals* as many as the sepals, and opposite to them, or in a few instances double the number, hypogynous, and generally with a glandular scale at the base; *stamens* as many as the petals, and opposite to them; *filaments* short; *anthers* oblong, adnate, bilocular, the cells dehiscing from base to apex by a subelastic valve; *ovary* by abortion solitary, ovate, suboblique, one-celled; *style* sublateral, very short, crowned with a suborbicular stigma; *fruit* baccate or capsular; *seeds* 1—3, ovate or globose, attached to the base of the lateral placenta; *albumen* fleshy, or subcorneous; *embryo* straight; *radicle* swollen at the point; *cotyledons* flat. *Shrubs* or *herbaceous perennial* plants, for the most part smooth, with alternate, compound, usually exstipulate *leaves*.

BERBERIS. (De Cand. i. 105.)

BERBERIS LYCIUM. (L.) Mountains in North India.

In India, an extract prepared by digesting in water sliced pieces of the root and stem branches of this and other species of barberry, is called *Rusot* and is used advantageously in cases of ophthalmia. Dr. Royle has seen it particularly useful when the acute symptoms have subsided; and others say, that it is perhaps the best application in ophthalmia ever employed. (L.)

The other species employed for making *rusot* are B. ARISTATA and B. KUNAWURENSIS. (O'Sh.)

*BERBERIS VULGARIS. (E. B. 49.) *B. oxycantha, Common barberry.*

Fl. yellow. June. Perennial. Woods and hedges.

Berries, *barberries, pipperidges*, very acid, incisive, astringent, hepatic; bark useful in jaundice as an aperitive; root very bitter; root, wood, and bark give wool a yellow colour, destructible by air and soap. (G.) A refreshing drink prepared by crushing the fruit in water is considered serviceable in fevers. (L.)

EPIMEDIUM. (De Cand. i. 110.)

*EPIMEDIUM ALPINUM. (E. B. 438.) *Alpine barren wort.*

Fl. purplish. May. Perennial. North of England.

Roots and leaves astringent.

LEONTICE. (De Cand. i. 109.)

LEONTICE CHRYSOGONUM. *Chrysogonum, Red turnip.* Greece.

LEONTICE LEONTOPETALON. *Leontapetalon, Black turnip.* South of Europe.

Roots stomachic.

ORDER 7. PODOPHYLLACEÆ. (De Cand. i. 111.)

Sepals 3—4, deciduous, or persistent; *petals* in two or three rows, each of which is equal in number to the sepals; *stamens* hypogynous, 12—18, arranged in two, three, or more rows; *filaments* filiform; *anthers* linear, or oval, terminal, turned inwards, bursting by a double longitudinal line; *torus* not enlarged; *ovary* solitary; *stigma* thick, nearly sessile, somewhat peltate; *fruit* succulent or capsular, 1-celled; *seeds* indefinite, attached to a lateral placenta, sometimes having an aril; *embryo* small, at the base of the fleshy albumen. *Herbaceous* plants, with broad lobed *leaves,* and radical, solitary, white *flowers.*

JEFFERSONIA. (De Cand. i. 111.)

JEFFERSONIA DIPHYLLA. North America.

Root purgative.

PODOPHYLLUM. (De Cand. i. 111.)

PODOPHYLLUM PELTATUM. *May apple, Mandrake in North America.* United States.

Root, *Podophyllum, P. U. S.*, purgative, a very valuable, sure, and active cathartic; it is administered in fine powder. The leaves are poisonous and the whole plant narcotic.

ORDER 8.—NYMPHÆACEÆ. (De Cand. i. 113.)

Torus of the flower expanded into a cup which encloses the ovaries, and is crowned by the stigmas; *sepals* 4—6, coloured, persistent, inserted on the torus; *petals* oblong, flat, in many rows, each row consisting of as many petals as there are sepals; *stamens* numerous, in many rows, inserted a little above the petals on the torus; *filaments* flat; *anthers* adnate, introrse, linear, bilocular, longitudinally birimose; *carpels* 8—24, enclosed within the torus, membranous, without valves, many seeded; *stigmas* connate at the base, free at the apex, radiating over the urceolate torus; *seeds* numerous, inversely ovate, globose, surrounded by a follicular arillus, and attached to the parietes of the carpels; *embryo* at the base of a farinaceous albumen, small, turbinate, globose, enclosed in a separate membraneous bag, and hence it appears to be monocotyledonous, but upon opening the bag two foliaceous cotyledons are exposed. *Aquatic* herbs, with round, repent, horizontal *stems; leaves* peltate, or cordate, fleshy, floating; *flowers* solitary and radical with long peduncles.

EURIALE. (De Cand. i. 114.)

EURIALE FEROX. *Anneslia spinosa..* Calcutta.

Seeds farinaceous, much eaten by the natives when roasted, or rather baked. The Hindoo physicians consider them possessed of powerful medicinal virtues, such as restraining seminal gleets, invigorating the system, &c. (L.)

NELUMBIUM.

NELUMBIUM SPECIOSUM. *Faba Æyptiaca, Nymphæa ne-*

lumbo, Egyptian bean, Jamaica water lily. Warm parts of Asia, &c.

Root used as food; liquor that runs out of the foot-stalk when cut used in loosenesses and vomitings; also diuretic and cooling; seeds nutritive; bark is said to form Chinese rice paper; others ascribe it to *Artocarpus jaca.*

NUPHAR. (De Cand. i. 116.)

*NUPHAR LUTEA. (E. B. 159.) *Nymphæa lutea, Yellow water lily.*

Fl. yellow. July. Perennial. Lakes and still waters.

Root stock slightly poisonous; beetles and cockroaches are said to be killed by its infusion in milk; it has been reputed sedative and anti-aphrodisiac, (L,); it is also astringent, and contains a quantity of fecula. (G.)

NYMPHÆA. (De Cand. i. 114.)

*NYMPHÆA ALBA. (E. B. 160.) *White water lily.*

Fl. white. July. Perennial. Lakes and still waters.

Root, astringent, refrigerant; a weak infusion useful in leprosy, dose a pint, night and morning; it is also styptic, and slightly narcotic; has been prescribed in dysentery, and is occasionally chewed by singers to relieve the relaxation of the uvula.

NYMPHÆA ODORATA. United States.

Stems extremely astringent, sometimes used in the composition of poultices, answering a purpose similar to that of lead poultices and alum curd. (L.)

ORDER 9.—PAPAVERACEÆ. (De Cand. i. 117.)

Sepals 2, deciduous; *petals* hypogynous, regular, often four, disposed in a cruciate manner; *stamens* hypogynous, some multiple of four, combined in parcels; *anthers* bilocular, innate, opening by a double furrow; *ovary* free, consisting either of a few carpels (2, 3), or of many (10—12), often surrounded by a membranous production of the thalamus; *style* none, or short; *stigmas* radiating; *capsule* ovate, or elongated and pod-shaped, the carpels being connected by their seminiferous margins; *seeds* numerous; *albumen* between fleshy and oily; *embryo* straight, minute, at the base of the albumen: *cotyledons* plano-convex. *Herbaceous* plants or *shrubs,* with a milky juice, and alternate, more or less divided *leaves; peduncles* long, one-flowered; *flowers* never blue.

ARGEMONE. (De Cand. i. 120.)

ARGEMONE MEXICANA. *Jamaica yellow thistle.* North America, West Indies.

Juice and leaves used in ophthalmia; seeds emetic, yield an oil. (G.) Called *Figo del inferno* by the Spaniards, on account of the powerful narcotic effects of the seeds, which are stronger than opium; an emulsion prepared from them acts first as an anodyne, and afterwards as a purgative; these effects are denied by some, but in Nevis the oil obtained from the seeds is used instead of castor-oil; juice employed in India in chronic ophthalmia, and in primary siphilitic sores; infusion said to be diuretic, and to give relief in stranguary produced by blisters. (L.)

BOCCONIA. (De Cand. i. 121.)

BOCCONIA FRUTESCENS. Mexico.

Root red, used in dyeing.

CHELIDONIUM. (De Cand. i. 122.)

*CHELIDONIUM MAJUS. (E. B. 1581.) *Common celandine, Great celandine.*

Fl. yellow. May, June. Perennial. Waste places near towns.

Root detersive, acrid, purgative; herb ophthalmic. (G.) Juice a violent acrid poison; it has been regarded medicinally, as stimulating, aperient, diuretic, and sudorific; it was also considered a powerful deobstruent. It is a popular remedy for warts, and has been employed successfully in opacities of the cornea. (L.)

GLAUCIUM. (De Cand. i. 122.)

*GLAUCIUM FLAVUM. (E. B. 8.) *Yellow-horned poppy, Chelidonium glaucum.*

Fl. yellow. July, Aug. Biennial. Sandy sea-shores.

Properties of the seeds and juice analogous to those of Argemone Mexicana. (G.) Juice used in veterinary practice; two drs. of the seed in a pint of water make a good emetic. (O'Sh.)

HYPECOUM. (De Cand. i. 123.)

HYPECOUM PENDULUM. *Cuminum soliquosum, Codded wild cumin.* South of Europe.

HYPECOUM PROCUMBENS. *Hypecoon, Horned wild cumin.* South of Europe.

Narcotic, yield *Cumin opium.*

MECONPOSIS. (De Cand. i. 120.)

MECONOPSIS ACULEATA. (O'Sh.) Nepaul.

Roots reputed to be exceedingly narcotic, but an alcoholic extract of one drachm of the root given to a small dog produced no perceptible effect. (O'Sh.)

PAPAVER. (De Cand. i. 117.)

*PAPAVER ARGEMONE. (E. B. 643.) *Argemone capitulo longiori, Long-headed bastard poppy, Long prickly-headed poppy.*

Fl. scarlet. June. Annual. Corn-fields.

Leaves used outwardly in inflammations, the yellow expressed juice takes off spots on the cornea.

*PAPAVER RHÆAS. (E. B. 645.) *Papaver erraticum, P. rubrum, Rhœas, Common red poppy, Corn rose.*

Fl. scarlet. June, July. Annual. Corn-fields.

Petals, *rhœadas petala*, pectoral, slightly anodyne, used also as a red colouring ingredient in medicines. (G.) The beautiful red petals are employed in the preparation of the *Syrupus rhœdos* of the Pharmacopœia, useful merely as a colouring matter; the plant is not known to be narcotic. (Pereira.)

*PAPAVER SOMNIFERUM. (E. B. 2145.) *White poppy.*

Fl. white. July. Annual. Originally from Asia, but now often cultivated in, and spontaneously growing by, the sides of fields.

There are two varieties of this plant,

α. *Nigrum*, with black seeds.
β. *Album*, with white seeds.

Seeds, *maw seed*, put into cakes, used in emulsions, better tasted than almonds, yield oil; capsules without the seed, *Poppy heads, Papaveris capsulæ*, used in anodyne fomentations, yield by incision the best opium, and by expression a coarser sort; cultivated by the Lincolnshire cottagers for the purpose of distilling a narcotic water from the flowers. (G.) From the wounded half-ripe capsules flows a juice which concretes into opium, the well-known powerful narcotic drug; from the dried capsule, the decoction, syrup, and extract of poppies, are prepared. Dr. Pereira justly observes that these capsules, or "heads," would be more active, if gathered before ripeness; when full-grown, and just when the first change of colour is perceptible, should be the best time to collect them; the seeds are not narcotic, but yield a bland oil, similar to that obtained from olives; they are given to birds as food.

SANGUINARIA. (De Cand. i. 121.)

SANGUINARIA CANADENSIS. *Blood root, Puccoon, Red root.* North America.

Juice blood red, used in dyeing; fruit narcotic; root *Sanguinaria, P. U. S.*, emetic, purgative. (G.) An acrid narcotic; in small doses it lowers the pulse, in smaller still it has some reputation as a tonic stimulant; powder of root acts violently as an emetic, is a useful escharotic in cases of soft polypi, has been recommended in typhoid pneumonia, phthisis, croup, hydrothorax, jaundice, &c. (L.)

ORDER 10. FUMARIACEÆ. (De Cand. i. 125.)

Calyx of two small membranaceous and deciduous sepals; *petals* four, cruciate, free, or united at the base, sometimes one free, and three united; the two exterior ones alternate with the sepals, and either one or both having a spur, or gibbosity, the two anterior ones oblong, linear, with a callosity at the apex; *stamens* with six filaments, arranged in two phalanxes opposite to the external petals; *anthers* six, small, the lateral ones of each phalanx are one-celled, the central two-celled; there are, therefore, eight cells of the anthers, and, strictly speaking, there are but two anthers in each phalanx; *ovary* one, free; *style* filiform; *stigma* bilamellate, parallel to the interior petals; *fruit* dry, in some a bivalved, polyspermous, dehiscing silique, with opposite valves, having two persistent, nerviform placentas at the suture; in some, the fruit is two-seeded, and indehiscent, the valves being firmly united; in others, the fruit is without valves, indehiscent, one-seeded by abortion; *seeds* ovato-globose, shining, with an arillus, or caruncle, horizontally attached to the lateral placenta; *albumen* fleshy; *embryo* basilar; *cotyledons* oblong. *Herbaceous* plants, with brittle stems, and a watery juice; *leaves* usually multified, alternate, often with tendrils; *flowers* purple, white, or yellow; *inflorescence* racemose.

CORYDALIS. (De Cand. i. 126.)

*CORYDALIS BULBOSA. (E. B. 1471.) *Fumaria solida, Bulbous rooted fumitory, Solid rooted corydalis.*

Fl. white or reddish. April, May. Perennial. Groves and thickets.

*CORYDALIS CAPNOIDES. (E. B. 588.) *Fumaria lutea, Yellow corydalis, Yellow fumitory.*

Fl. yellow. May. Perennial. Old walls.

Very opening, refreshing; of use in cutaneous disorders, boiled in milk; or their expressed juice taken daily, to ℥ij. twice a day; infusion removes freckles, and clears the skin; dyes yellow.

CORYDALIS FABACEA. *Fumaria fabacea.* Sweden, Denmark.

CORYDALIS TUBEROSA. *Fumaria cava.* Hedges in South Europe.

Roots very bitter, rather acrid; they are the *Radix aristolochiæ* of the continental shops, which is principally employed as an external application to indolent tumors.

FUMARIA. (De Cand. i. 129.)

*FUMARIA OFFICINALIS. *Common fumitory.*

Fl. pink, blood-red at tips. June. September. Annual. Road-sides.

Herbage bitter, slightly diaphoretic and aperient; the juice was formerly administered in cutaneous diseases, and obstructions of the liver. (L.)

ORDER 11. CRUCIFERÆ. (De Cand. i. 131.)

Sepals four, cruciate, deciduous; *petals* four, cruciate, alternate with the sepals; *stamens* six, of which two are shorter, and opposite the lateral petals, sometimes toothed; *disk* with various green glands; *ovary* single; *style* one; *stigmas* two; *fruit* a silique, or silicle, one-celled, one or many-seeded, often tipped with the style; *seeds* attached in a single row by a funiculus to each side of the placenta; *albumen* none; *embryo* oily, with the radicle folded upon the cotyledons. *Herbs* or *shrubs*, with mostly alternate *leaves*; *racemes* opposite the leaves, or terminal, generally without bracteæ.

Contain azote (nitrogen) in their composition and therefore easily putrify, and furnish volatile alkali by distillation; they are generally stimulant, but when dried, lose their antiscorbutic quality; seeds soon lose their vitality, unless kept moist in a cool place; these plants are always the first to be attacked by insects, and soon destroyed by them, when kept in a hortus siccus.

ALYSSUM. (De Cand. i. 160.)

ALYSSUM CAMPESTRE. *Alysson.* Spain.
Seeds, with honey, take away freckles; used in mania.

ALLIARIA. (De Cand. i. 196.)

*ALLIARIA OFFICINALIS. (E. B. 796.) *Erysimum alliaria, Jack by the hedge, Sauce alone.*
Fl. white. May, June. Perennial. Hedges.
Antiscorbutic, used in coughs; externally detersive; seeds acrid, lithontriptic.

ARABIS. (De Cand. i. 142.)

*ARABIS HIRSUTA. (E. B. 587.) *Turritis hirsuta, Tower mustard.*
Fl. white. June. Biennial. Walls, rocks, and banks.
*ARABIS TURRITA. (E. B. 178.) *Bastard tower mustard, Tower-wall cress.*
Fl. white. May. Perennial. Walls at Oxford and Cambridge.
Juices kill worms, and cure the thrush.

BARBAREA. (De Cand. i. 140.)

*BARBAREA PRÆCOX. (E. B. 1129.) *Erysimum præcox, Early winter cress.*
Fl. yellow. April, October. Waste places, Devonshire.
Herb acrid, used in scurvy, eaten in salads.
*BARBAREA VULGARIS. (E. B. 443.) *Erysimum barbarea, Bitter winter cress, Yellow rocket, Winter rocket.*
Fl. yellow. May, August. Perennial. Pastures and hedges.
Antiscorbutic, used in coughs; externally detersive; seeds acrid, lithontriptic.

BRASSICA. (De Cand. i. 213.)

*BRASSICA CAMPESTRIS. (E. B. 2234.) *Wild navew.*
Fl. yellow. June, July. Annual, biennial. Fields.
Several varieties of this plant are cultivated for different purposes, these are

α. *Brassica campestris oleifera, Colsa de printems, Navette de printems.*
Seeds pressed for oil.

β. *Brassica pabularia.*
Employed for sheep fodder.

γ. *Brassica napobrassica, Swedish turnip.*
Used for food.

*BRASSICA NAPUS. (E. B. 2146.) *Brassica napus oleifera, Napus sylvestris, Cole, Rape, Colsa d'hiver, Navette d'hiver.*

Fl. yellow. May, June. Biennial. Fields.

Cultivated for an oil expressed from the seeds.

BRASSICA ESCULENTA (*variety*). *Napus dulcis, Navew, French turnip.*

Roots nourishing, containing a sweet juice, which is very pectoral, and of great use in coughs, asthma, colds, and consumptions.

BRASSICA OLERACEA. (E. B. 637.) *B. Sylvestris, Wild cabbage.*

Fl. yellow. May, June. Biennial. Fields, &c.

The principal cultivated varieties are

- β. *Acephala, Curled kale.*
- γ. *Bullata, Savoy cabbage.*
- δ. *Capitata, Common white and red cabbage.*
- ε. *Caulorapa, Turnip-stemmed cabbage.*
- ζ. *Botrytis:*
  - *a, Cauliflora, Cauliflower.*
  - *b. Asparagoides, Broccoli.*

These, and others, form a copious source of aliment to man and beast; juice a good pectoral, discussive, diuretic, and opens the belly; leaves vulnerary, opening.

Red cabbage, Brassica oleracea rubra. Leaves used to make a test liquor for acids and alkalies. *Pickled red cabbage.* The leaves sliced, and preserved with vinegar and spices, used as a sauce.

Saur kraut, Brassica acidulata. Large white cabbages, cut into thin horizontal slices, and placed in a barrel, with a layer of salt at the top and bottom, and between each layer of cabbages. A board, with some weight on it, is then put on the top, and it is kept in a cool place for some weeks; a kind of fermentation takes place, and vinegar is formed; some add juniper berries, coriander seeds, tops of anise, or caraway seeds, to the salt, as a kind of spice. It may be dried in an oven without any loss of its flavour.

*BRASSICA RAPA. (E. B. 2176.) *Wild turnip.*

Fl. yellow. April, May. Biennial.

When cultivated, the root is nourishing.

Brassica rapa oleifera, Navette de dauphine, is a variety cultivated on account of the oil expressed from the seeds.

BUNIAS. (De Cand. i. 229.)

BUNIAS ERUCAGO. South of Europe.

Acrid, diuretic.

CAMELINA. (De Cand. i. 201.)

*CAMELINA SATIVA. (E. B. 1254.) *Myagrum sativum, Wild gold of pleasure.*

Fl. yellow. June, July. Annual. Fields among flax.

Vermifuge; seeds, *Sesamum seeds,* useful in palsy; yield oil.

Capsella. (De Cand. i. 177.)

*Capsella bursa pastoris. (E. B. 1485.) *Thlaspi bursa pastoris, Shepherd's purse.*

Fl. white. Whole year. Annual. Very common.

Seeds acrid, detersive, astringent.

Cakile. (De Cand. i. 185.)

*Cakile maritima. (E. B. 231.) *Bunias cakile, Purple sea rocket.*

Fl. purple. June, August. Annual. Sandy sea shores.

Antiscorbutic; useful in the colic.

Cardamine. (De Cand. i. 149.)

*Cardamine pratensis. (E. B. 776.) *Cuckoo flower, Ladies smock.*

Fl. purple or violet. May. Perennial. Moist meadows.

Said to be stimulant, diaphoretic, and diuretic. The dried flowers have been a popular remedy for epilepsy in children. (L.) Depurative, and antiscorbutic; used in obstructions and calculous cases. Flowers, *cardamines flores,* antispasmodic, in doses of ʒj. to ʒij. twice or thrice a day. Flowering tops, are still more successfully used in epileptic fits. (G.) Recommended by Sir George Baker in cholera and spasmodic asthma. (Pereira.)

Cheiranthus. (De Cand. i. 135.)

*Cheiranthus cheiri. (E. B. 1934.) *Cheiri, Leucojum lutea, Common wall flower.*

Fl. yellow or dark brown. April, May. Perennial or biennial. Walls.

Flowers cordial, emmenagogue; used in palsy.

Cochlearia. (De Cand. i. 135.)

*Cochlearia anglica. (E. B. 552.) *C. Britannica marina, English scurvy grass.*

Fl. white. May, June. Annual. Sea shores.

*Cochlearia officinalis. (E. B. 551.) *C. hortensis, C. Batava, Common scurvy grass.*

Fl. white. May, June. Annual. Muddy places near the sea.

These herbs abound in valuable principles, which are dissipated by heat; they are the most valuable of antiscorbutics, when eaten raw, or only their juice, ℥j. to ℥iiij.; an excellent whey may be made from them.

*Cochlearia armoracia. (E. B. 2403.) *Armoracia, Raphanus rusticanus, R. sylvestris, Horse radish.*

Fl. white. May. Perennial. A doubtful native; Gardens.

Root, *Armoraciæ radix*, powerfully antiscorbutic, antirheumatic, acrid; taken, cut into small pieces, without chewing, cochl. j., every morning; incisive, used as a sauce. (G.) Root stimulant, diaphoretic, and diuretic, and externally rubefacient; it is used in paralysis, rheumatism, dropsy, and some cutaneous affections; a syrup made with a concentrated infusion of it, removes hoarseness arising from relaxation. (Thomson.) Steeped in cold milk, it is said to form one of the best cosmetics. (Burnett.) (L.)

CORONOPUS. (*Senebiera*, De Cand. i. 202.)

*CORONOPUS RUELLI. (E. B. 1660.) *Senebiera coronopus, D. C., Cochlearea coronopus, Swine's cress, Wart cress.*

Fl. white. June, September. Annual, Biennial. Waste ground.

Properties the same as those of Cochlearia officinalis.

CRAMBE. (De Cand. i. 225.)

CRAMBE MARITIMA. (E. B. 924.) *Brassica marina Anglica, Sea cabbage, Sea colewort, Sea kale.*

Fl. white. June. Perennial. Sandy sea-shores.

An excellent potherb when blanched.

DENTARIA. (De Cand. i. 154.)

DENTARIA DIPHYLLA. North America.

Dried roots used as mustard.

DENTARIA HEPTAPHYLLA.

Root astringent, attenuant.

DRABA. (De Cand. i. 166.)

DRABA MURALIS. (E. B. 912.) *Wall whitlow grass.*

Fl. white. May. Annual. Limestone mountains and walls.

Opening, detersive; seed, English pepper, hot, used for pepper.

EROPHILA. (De Cand. i. 172.)

*EROPHILA VULGARIS. (E. B. 586.) *Draba verna, Paronychia vulgaris, Whitlow grass.*

Fl. white. March, May. Annual. Walls and dry banks.

Qualities the same as those of *Draba muralis.*

ERUCA. (De Cand. i. 223.)

ERUCA SATIVA. *Brassica eruca, Garden rocket.* South of Europe.

Antiscorbutic, diuretic, flatulent; seeds acrid, stimulant, exciting the stomach; may be substituted for mustard, but are less pungent.

ERYSIMUM. (De Cand. i. 196.)

*ERYSIMUM CHEIRANTHOIDES. (E. B. 942.) *Camelina, Treacle mustard, Worm seed.*

Fl. white. June. Annual. Fields, &c.
Herb, vermifuge, stomachic.

HESPERIS. (De Cand. i. 188.)

*HESPERIS MATRONALIS. (E. B. 731.) *Dame's violet, Rocket.*
Fl. purple. June. Perennial. Hilly pastures.
Incisive; used in dysury, stranguary, and dyspnœa.

IBERIS. (De Cand. i. 178.)

*IBERIS AMARA. (E. B. 52.) *Bitter candytuft.*
Fl. white. July. Annual. Chalky soil, rare.
Antiscorbutic; may be eaten in salads.

ISATIS. (De Cand. i. 210.)

*ISATIS TINCTORIA. *Glastum, Isatis, Dyer's woad, Woad.*
Fl. yellow. July. Perennial. Cultivated fields.
Desiccative, astringent; used as a blue dye; and indigo is said to have been manufactured from it. *I. lusitanica* is also used in dyeing.

LEPIDIUM. (De Cand. i. 203.)

*LEPIDIUM CAMPESTRE. (E. B. 1385.) *Thlaspi campestre, Bastard cress, Mithridate mustard, Mithridate pepperwort.*
Fl. White. July. Annual. Very common.
Seeds acrid, detersive, astringent; cultivated as a salad.

LEPIDIUM IBERIS. *Sciatica cress.* South of Europe.
Made into a poultice with curd, used in sciatica.

*LEPIDIUM LATIFOLIUM. (E. B. 182.) *Piperitis, Broad-leaved pepperwort, Dittander.*
Fl. white. July. Perennial. Wet places near the sea.
Acrid, irritative, useful in sciatica; infused in beer facilitates delivery; sialogogue.

**LEPIDIUM SATIVUM. *Nasturtium hortense, Garden cress.* Native of Asia.
Cultivated as a salad. Seeds opening, incisive, antiscorbutic. (G.) Seed used in India by the native practitioners as a gentle stimulant. Bruised and mixed with lime-juice, it is deemed useful for checking local inflammation. Taken whole in half-drachm doses, it answers as a gentle and warm aperient. (O'Sh.)

LUNARIA. (De Cand. i. 156.)

**LUNARIA REDIVIVA. *Honesty, Moonwort, Satin flower.*
Fl. purple, fragrant. May, June. Perennial. South of Europe.
Roots detersive; leaves diuretic; seeds extremely acrid, used in epilepsy.

MATHIOLA. (De Cand. i. 132.)

*MATHIOLA INCANA. (E. B. 1935.) *Cheiranthus incanus, Leucojum album, Stock gilliflower, Hoary shrubby stock.*

Fl. purple, red, white, or variegated. May, June. Biennial. Cliffs near Hastings. Doubtful native.

Flowers used in inflammation, and to cleanse ulcers.

NASTURTIUM. (De Cand. i. 137.)

*NASTURTIUM AMPHIBIUM. (E. B. 1840.) *Raphanus aquaticus, Sisymbrium amphibium, Amphibious cress, Water radish.*

Fl. yellow. June, August. Perennial. Watery places.

Acrid, used in scurvy, eaten in salads.

*NASTURTIUM OFFICINALE. (E. B. 155.) *Nasturtium aquaticum, Sisymbrium aquaticum, Water cresses.*

Fl. white. July. Perennial. Brooks, &c., common.

Depurative and antiscorbutic, used in obstructions and calculous cases.

RAPHANUS. (De Cand. i. 228.)

*RAPHANUS RAPHANISTRUM. (E. B. 856.) *Jointed charlock, Wild mustard.*

Fl. yellow, veined. June, July. Annual. Corn-fields.

**RAPHANUS SATIVUS. *R. hortensis, Common radish.*

Fl. white, with violet veins. July. Annual. Native of Asia.

The principal varieties cultivated are,

α. *Rotundus.* Root subglobose. White or red.
β. *Oblongus.* Root oblong. White or red.
γ. *Niger.* Root hard; black; oblong, rarely round.

Aperitive, diuretic, and excite the appetite; seeds attenuant, pressed for oil. (G.) They are said by Von Martius to be emetic. The roots are diuretic and laxative; the expressed juice is sometimes used on the continent. (L.)

SINAPIS. (De Cand. i. 217.)

*SINAPIS ALBA. (L. B. 1677.) *White mustard.*

Fl. yellow. July. Annual. Waste ground.

Seeds ground for mustard, but not so stimulant. (G.) Seeds powerfully acrid and pungent, employed in the state of flour in the common table mustard, and in their entire state as stimulating cathartics; ulceration of the intestines has, however, been produced by the use of them, when they have been lodged in the vermiform appendages of the cœcum. (L.)

*SINAPIS ARVENSIS. (E. B. 1748.) *Yellow charlock.*

Fl. yellow. June. Annual. Waste ground.

Seeds detersive and digestive; when given to birds instead of rape, they heat and kill them; ground for mustard, but of inferior flavour.

SINAPIS CHINENSIS. *Chinese mustard.* China.

Seeds considered by the Mahometan and Hindoo practitioners stimulant, laxative, and stomachic. (L.)

*SINAPIS NIGRA. (E. B. 969.) *Sinapi, Common mustard.*

Fl. yellow. June, Annual. Waste ground.

Seeds, *sinapis semina*, unbruised, coch. maj. j. stimulant, and generally laxative; cure vernal agues; farina of the seeds used as a rubefacient, and as seasoning; when mixed with water or vinegar, has a bitter flavour, which after some time goes off; hull of the seed sold for ground-pepper, under the name of P. D., *i.e.* pepper dust, and pressed for oil. (G.) Seeds acrid, stimulating, and bitter; the oil is purgative, and has been proposed as a rubefacient in paralysis, and as a vesicant; the distilled water has been used in itch; the flour forms an useful local irritant in the form of a poultice. (L.)

SINAPIS DICHOTORNA, *Sersoon.*

SINAPIS RAMOSA. *Raee.*

SINAPIS GLAUCA, *Sheta sersha. Toria.*

SINAPIS JUNCEA, *Bunga serson.*

Seeds pressed for oil. (G.) Employed in India as mustard; the last three species extensively cultivated for their oil. (O'Sh.)

SISYMBRIUM. (De Cand. i. 190.)

*SISYMBRIUM IRIO. (E. B. 1631.) *Erysimum latifolium, Broad-leaved hedge mustard, London rocket.*

Fl. yellow. July, August. Annual. Waste places.

Herb used as a heating pot-herb.

*SISYMBRIUM OFFICINALE. (E. B. 735.) *Erysimum officinale, Hedge mustard.*

Fl. yellow. June, July. Annual. Way-sides, common.

Antiscorbutic, used in coughs; externally detersive; seeds acrid, lithontriptic.

*SISYMBRIUM SOPHIA. (E. B. 963.) *Sophia chirurgorum, Flixweed.*

Fl. yellow. August. Annual. Waste places.

Vulnerary, astringent, detersive.

TEESDALIA. (De Cand. i. 171.)

*TEESDALIA IBERIS. (E. B. 327.) *Bursa pastoris minor, Iberis nudicaulis.*

TEESDALIA NUDICAULIS, *Lesser shepherd's purse, Naked-stalked teesdalia.*

Fl. white. May, June. Annual. Battersea, common.

Antiscorbutic, may be eaten in salads.

THLASPI. (De Cand. i. 175.)

*THLASPI ARVENSE. (E. B. 1659.) *Mithridate mustard, Penny cress, Treacle mustard.*

Fl. white. June, July. Animal. Fields and road-sides, rare.

Seeds acrid, detersive, astringent.

ORDER 12.—CAPPARIDEÆ. (De Cand. i. 237.)

Sepals 4, either nearly distinct, equal or unequal, or cohering in a tube, the limb of which is variable in form; *petals* 4, cruciate, usually unguiculate and unequal; *stamens* almost perigynous, very seldom tetradynamous, most frequently arranged in some high multiple of a quarternary number, definite, or indefinite: *disk* hemispherical, or elongated after bearing glands; *ovary* stalked; *style* none or filiform; *fruit* either pod-shaped and dehiscent, or baccate, one-celled, very rarely one-seeded, most frequently with two polyspermous placentæ; *seeds* generally reniform, without albumen, but with the lining of the testa tumid, attached to the margin of the valves; *embryo* incurved; *cotyledons* foliaceous, flattish. *Herbaceous* plants, *shrubs*, or even *trees*, without true stipules, but sometimes with spines in their place; *leaves* alternate, stalked, undivided or palmate; *flowers* in no particular arrangement.

CAPPARIS. (De Cand. i. 245.)

CAPPARIS CYNOPHALLOPHORA. Carribean Islands.

An infusion of the acrid root has been recommended as a specific in dropsy.

CAPPARIS PULCHERRIMA. *Carborescens.* Carthagena.

A poisonous fruit, called *Fruta de burro*, is supposed to belong to this or an allied species.

CAPPARIS SPINOSA. *Caper tree.* South of Europe.

The young flower-buds are the pickled capers of the shops; they are esteemed antiscorbutic, stimulant, and aperient. (L.) Bark of the root acerb, discussive, diuretic, splenic; useful in gout. (G.)

CRATÆVA. (De Cand. i. 243.)

CRATÆVA GYNANDRA. *Garlick pear.* Jamaica.

Bark of root said to blister like cantharides.

CRATÆVA TAPIA. West Indies.

Bark bitter and tonic; has been used in the cure of intermittent fevers.

POLANISIA. (De Cand. i. 242.)

POLANISIA ICOSANDRA. *Cleome icosandra, and dodecandra. C. viscosa. P. viscosa. Bastard mustard.* East Indies.

Used in Cochin China as a counter-irritant, in the same way as sinapisms in Europe, and as a vesicant. The root used as a vermifuge in the West Indies, (L.); it is also employed as a sauce. (G.)

ORDER 13.—FLACOURTIANEÆ. (De Cand. i. 255.)

Sepals 4—7, definite, slightly cohering at base; *petals* equal to the sepals in number, and alternating with them, seldom wanting; *stamens* hypogynous, either equal to the petals in number, or some multiple of them, sometimes changed into nectariferous scales; *ovary* roundish, distinct, sessile or slightly stalked; *style* none, or filiform; *stigmas* as many as the valves of the ovary, more or less distinct; *fruit* one-celled, either fleshy and indehiscent, or capsular, with four or five valves, the centre filled with a thin pulp; *seeds* few, thick, usually enveloped in a pellicle formed by the withered pulp, attached to the surface of the valves in a branched manner, not in a line, as in Violaceæ and Passifloraceæ;

albumen fleshy, rather oily; *embryo* straight in the axis, with the radicle turned to the hilum, and therefore usually superior; *cotyledons* flat, foliaceous. *Shrubs,* or small *trees,* with alternate simple *leaves,* without stipules; *peduncles* axillary, many flowered.

CHAULMOOGRA. (Roxb. fl. Ind. iii. 836.)

CHAULMOOGRA ODORATA. *Chaulmoogra.* East Indies.

The seeds, beaten up with butter into a soft mass, and applied thrice a day to the parts affected, are used extensively by the natives of India in the cure of cutaneous diseases.

FLACOURTIA. (De Cand. i. 256.)

FLACOURTIA CATAPHRACTA. East Indies.

Small leaves and shoots used in India as gentle astringents, in the dose of half a drachm in powder. An infusion of the bark in cold water is also employed as a remedy in hoarseness. (O'Sh.)

FLACOURTIA SEPIARIA. *Courou moelli.* East Indies.

Fruit delicious, eatable; a decoction of the bark in oil used against gout; a decoction of the leaves and root in cow's milk used as an antidote against the bite of serpents.

The fruits of F. ramontschi, and F. sapida, are also eaten.

HYDNOCARPUS. (De Cand. i. 257. *Hydrocarpus.* Lindl.)

HYDNOCARPUS INEBRIANS. *H. venenata.* Ceylon.

Bears a poisonous fruit, which, when eaten, occasions giddiness and dangerous intoxication.

STIGMAROTA. (De Cand. i. 257.)

STIGMAROTA JANGOMAS. *Spina spinarum, Jangomas.* Java.

Fruit eaten.

ORDER 14.—BIXINEÆ. (De Cand. i. 259.)

Sepals 4—7, either distinct, or cohering at the base, with an imbricated æstivation; *petals* five, like the sepals, or wanting; *stamens* indefinite, distinct, inserted upon a receptacle at the base of the calyx; *anthers* two-celled; *ovary* superior, sessile, one-celled; *ovules* proceeding from four to seven parietal placentæ; *style* single, or in two or four divisions; *fruit* capsular, or berried, one-celled, many-seeded; *seeds* attached to parietal placentæ, or enveloped in pulp; *albumen* either fleshy or very thin; *embryo* included, either straightish or curved; *cotyledons* leafy; *radicle* pointing to the hilum. *Trees* or *shrubs,* with alternate simple *leaves; peduncles* axillary, one or many flowered, with bracts.

BIXA.

BIXA ORELLANA. *Annotto,* or *arnotto plant.* Tropical parts of America.

The seeds are covered with an orange red waxen pulp, or pellicle, which substance is the *annotto* or *arnotto* of the shops; it is chiefly used for colouring cheese, and in the preparation of chocolate; but was formerly reckoned an antidote to the poison of the Manioc, or Janipha manihot.

ORDER 15.—CISTINEÆ. (De Cand. i. 263.)

Sepals five, persistent, continuous, with the pedicel generally unequal, two exterior being smaller than the others, and sometimes evanescent, three interior contorted in æstivation; *petals* five, hypogynous, caducous, equal, contorted in æstivation, but in a direction opposite to that of the sepals; *stamens* indefinite, few or many, hypogynous, erect; *filaments* free; *anthers* ovate, bilocular, birimose, innate; *ovary* free; *style* one, filiform; *stigma* simple; *capsule* of 3—5, (seldom 10,) valves; in some having in their centre a placentary longitudinal nerve, and then the capsule is one-celled; in others the middle nerve projects internally, forming a more or less perfect septum, and then the capsule is completely or incompletely multilocular; the *seeds* are therefore either parietal, or adnate to the septum, numerous, and small; *albumen* farinose; *embryo* spiral or curved, within the *albumen*. *Shrubs* or *herbs* having simple, entire, or subdental opposite *leaves* and racemose inflorescence.

The plants of this order are astringent and pectoral.

CISTUS. (De Cand. i. 263.)

CISTUS CRETICUS. Crete, Syria.

The gum resin *Ladanum* is produced principally by this species; esteemed as a stimulant and emmenagogue; it has also been recommended in chronic catarrh.

CISTUS LADANIFERUS, C. LAUREFOLIUS, and C. LEDON, natives of the south of France and Spain, are also said to yield the same substance. (L.) The inferior sort. (Gray.)

CISTUS INCANUS. Spain.

The parasitic plant *Hypocistus*, *Cytinus hypocistus*, grows chiefly upon this plant.

CISTUS SALVIFOLIUS. *C. fœmina*, *Female holly rose.* South of France.

CISTUS VILLOSUS. *C. mas*, *Male holly rose.* Spain.

Leaves and flowers astringent.

HELIANTHEMUM. (De Cand. i. 266.)

HELIANTHEMUM FUMANA. *Cistus fumana.* France.

*HELIANTHEMUM GUTTATUM. (E. B. 544.) *Cistus guttatus*, *Spotted annual rock rose.*

Fl. yellow, spotted at the base. June, July. Annual. Jersey.

*HELIANTHEMUM VULGARE. (E. B. 1321.) *Cistus helianthemum*, *Helianthemum anglicum luteum*, *Dwarf cistus*, *Little sunflower.*

Fl. yellow. July, August. Perennial. Dry pastures.

These and the other species are astringent.

ORDER 16.—VIOLAREÆ. (De Cand. i. 287.)

Calyx of five persistent sepals, usually elongated at the base; *petals* five, alternate with the sepals, hypogynous, equal or unequal, lower one spurred, or cuculate; *stamens* five, alternate with the petals, inserted on a thalamus; *anthers* bilocular, often free and adpressed to the ovary, sometimes more or less united at the base into a monadelphous disk; *filaments* dilated; *ovary* one-celled, with parietal placentas; *style* one, simple; *stigma* slightly lateral, hooded; *capsule* three valved, many seeded; *albumen* fleshy; *embryo* straight. *Herbs* or *shrubs* generally with alternate stipulate *leaves*; inflorescence various.

IONIDIUM. (De Cand. i. 310.)

IONIDIUM MICROPHYLLUM. *Cuichunculli.*

IONIDIUM POYAYA. (Lindl.) *Poaya do campo.* South America.

Roots emetic, collected as a substitute for true ipecacuanha in Brazil. (G.) These Ionidia deserve to be attentively studied with reference to their medicinal properties. (L.)

IONIDIUM BREVICAULE.

IONIDIUM MAYTENSILLO.

IONIDIUM PARVIFLORUM. *Viola parviflora, V. Ibonbou?*

IONIDIUM URTICI-FLORUM.

Also furnish similar active principles.

IONIDIUM SUFFRUTICOSUM. *Viola suffruticosa.* East Indies. Employed in India as a demulcent. (O'Sh.)

POMBALIA. (De Cand. i. 307.)

POMBALIA ITUBU. *Ionidium ipecacuanha, Viola ipecacuanha, Poaya branca, Poaya da praja.* Brazil.

Root, *white ipecacuanha*, emetic, milder than the false kinds, but mostly adulterated with them; dose, gr. v. to ℈ij.; in small doses, gr. ss. to gr. ij.; given frequently it is diaphoretic, expectorant, and stomachic. In both methods it is antidysenteric, gr. v., or enough to excite nausea, given an hour before the fit, has been successful in intermittents.

VIOLA. (De Cand. i. 291.)

*VIOLA CANINA. (E. B. 620.) *Dog violet, Marsh violet.*

Fl. blue. April, August. Perennial. Woods and banks.

Considered as a depurative, and recommended for the cure of cutaneous affections; root emetic.

*VIOLA ODORATA. (E. B. 619.) *Sweet violet, Purple violet.*

Fl. deep purple, fragrant. March, April. Perennial. Woods and banks.

Petals made into syrup.

*VIOLA TRICOLOR. (E. B. 1287.) *Heart's-ease, Pansy.*

Fl. of one, two, or three colours, blue, yellow, and white. Whole summer. Annual. Banks.

The flowers of these three are moistening and pectoral; seeds diuretic; roots expectorant, slightly emetic, and in doses of ℈j. cathartic, (G.); Leaves of V. tricolor employed in Italy in the cure of Tinea capitis. (L.) Leaves of flower used instead of those of V. odorata in syrup.

VIOLA PEDATA. *American violet, Viola P. U. S.*

Root emetic.

ORDER 17.—DROSERACEÆ. (De Cand. i. 317.)

Sepals five, persistent, imbricated in æstivation; *petals* five, distinct, hypogynous, alternate with the sepals; *stamens* free, alternate with the petals, and equal to them in number, or double, triple, or quadruple their number; *anthers* two-celled; *ovary* one; *styles* 3—5, united at the base, or distinct; bifid, or ramose: *capsule* 1—3 celled, 3—5 valved, margin of valves bent inwards, dehiscing at the apex; *seeds* attached to a central nerve, or only to the base, naked, or enclosed in a thin follicular arillus; *albumen* cartilaginous, or fleshy; *embryo* straight, with the radicle towards the hilum. *Herbaceous* plants, with alternate *leaves*, having stipulary fringes, and a circinate vernation; *peduncles* when young circinate.

DROSERA. (De Cand. i. 317.)

*DROSERA ROTUNDIFOLIA. (E. B. 867.) *Rosa solis*, *Ros solis*, *Rosella*, *Round-leaved sundew.*

Fl. white. July. Annual. Bogs and moist heaths.

Acrid, anti-arthritic, detersive, externally rubefacient.

PARNASSIA. (De Cand. i. 320.)

*PARNASSIA PALUSTRIS. (E. B. 82.) *Gramen Parnassi*, *Grass of Parnassus.*

Fl. white, with green pellucid nectaries. August, October. Perennial. Bogs and wet places.

Juice ophthalmic; seeds diuretic, aperitive.

ORDER 18.—RESEDACEÆ. (De Cand., Bot. gul. i. 66.)

Sepals 4—6, continuous, with the pedicel persistent; *petals* 4—6, alternate, with the sepals hypogynous, unequal, the upper with squamiform, palmatipartite limbs; the lateral 2—3 lobed, and the lower entire; *stamens* 10—24, hypogynous; *filaments* generally somewhat united at the base, monadelphous, or polyadelphous; *anthers* two-celled; *nectariferous scales* very obtuse, inserted on the torus beneath the stamens; *torus* either short or stipitiform; *ovaries* 3—6, monostylous, sometimes free, inserted on the upper part of the torus; sometimes united into one ovary, which is then crowned by 3—6 short conical styles; the *carpels* are therefore either free, folliculiform, few-seeded, and dehiscing internally, or united into a 3—6 valved capsule, gaping at the apex, one-celled, many-seeded; *placentas* 3—6, adnate to the middle of the carpels or valves, many-seeded; sometimes in the free carpels, 1—2 seeded; *seeds* subpendulous from the placenta in a double row, and furnished with a crustaceous testa; *albumen* none, or thin and carnoso membranous; *embryo* arcuate; *cotyledons* fleshy; *radicle* superior. *Herbs* with alternate leaves; *flowers* with short pedicles.

RESEDA.

*RESEDA LUTEA. (E. B. 321.) *R. vulgaris*, *Wild mignonette*, *Wild rocket.*

Fl. yellow. July, August. Annual. Waste places.

Discussive, used externally to dissipate inflammations and tumors; dyes yellow.

*RESEDA LUTEOLA. (E. B. 320.) *Dyers weed*, *Yellow weed*, *Weld.*

Fl. yellow. July. Annual. Waste places on chalky soil.

Used in dyeing yellow and green; *French weld*, stem much finer than the English.

ORDER 19.—POLYGALEÆ. (De Cand. i. 321.)

Sepals five, imbricate in æstivation, the two interior generally petaliform, the three exterior smaller, two of them are anterior, and sometimes united, the third is posterior; *petals* 3—5, hypogynous, more or less united by means of the tube of the stamens, (rarely distinct); *filaments* of stamens adherent to the petals, monadelphous, divided at the apex into two opposite equal phalanxes; *anthers* 8, one-celled, innate, dehiscing by pores at the apex; *ovary* one. free, two-celled, rarely one or three-celled; *style* one; *stigma* one; *pericarp* capsular or drupaceous, two or one-celled, valves septigerous in the middle; *seeds* pendulous, solitary, often with a carunculate arillus at the base; *embryo* straight, generally in the axis of a fleshy albumen, or (rarely) exalbuminous, in which case the endopleura is turned. *Herbs* or *shrubs* with entire, generally alternate *leaves*, articulated on the stem.

KRAMERIA. (De Cand. i. 341.)

KRAMERIA IXINA. St. Domingo.
KRAMERIA TRIANDRA. Peru.

Root. *Rhatany*, *Rhatania*, *Krameriæ radix*, astringent and tonic. (G.) The extract of K. triandra is styptic and tonic, operates powerfully upon tumors, resolving and restoring tone to those parts; corrects and cures all kinds of ulcers, when applied to them in plaisters; when administered internally, extract of Rhatany is apt to be rejected by the stomach, till three or four doses have been taken; if the stomach will not retain it, it should be given in pills, the patient immediately chewing a little lemon, and drinking and gargling with vinegar diluted with water. (Ruiz.) Commonly used in Peru as tooth-powder. (L.)

MONNINA. (De Cand. i. 338.)

MONNINA POLYSTACHYA. Peruvian Andes.

The bark of the root, when fresh pounded and moulded into balls, or the dry bark, is detergent; it readily froths when agitated in water, and is used by the Peruvians as a substitute for soap; the silversmiths of Huanuco employ it for cleansing and polishing wrought silver. Antidysenteric, used with great success in the cure of dysenteries and irritating diarrhœas in Peru, where it is preferred to quassia. (Ruiz, L.)

MONNINA SALCIFOLIA. Peru.

Has the same qualities.

POLYGALA. (De Cand. i. 321.)

POLYGALA AMARA. Europe.

*POLYGALA VULGARIS. (E. B. 76.) *Common milk wort.*

Fl. blue, pink, or white. January, August. Perennial. Dry hills, pastures, &c.

Roots may be substituted for rattlesnake root; dose in powder ʒss. to ʒj., useful in pleurisy; herbs bitter, diaphoretic, in infusion ℥iiij., taken daily, promote expectoration, and are used in catarrhous coughs. (G.)

POLYGALA CARACASANA. Caracas.

Root with a taste similar to P. senega, but not altogether equal to it. (L.)

POLYGALA CHAMÆBUXUS. Mountain woods, Europe.

Qualities similar to those of P. senega.

POLYGALA CROTALARIOIDES. Nepal.

A reputed cure for the bite of venomous reptiles. (G.) Used as a snake antidote in Nepal and the Himalayas. (O'Sh.)

POLYGALA GLANDULOSA.

Emetic.

POLYGALA POAYA. (*Martius Spec. Mat. Med. Bras.*) Brazil.

An active emetic; root used successfully in the bilious fevers of Brazil; when fresh, scarcely inferior to ipecacuanha. (Martius.) (L.)

POLYGALA RUBELLA. (Wild.) *P. polygama, Bitter polygala.* United States.

A strong bitter taste pervades all the parts; in small doses its infusion is found useful as a tonic and stimulant to the digestive organs; in large doses it opens the body, and excites diaphoresis. (L.)

POLYGALA SANGUINEA. Carolina.

A supposed antidote to the bite of poisonous reptiles. (L.)

POLYGALA SENEGA. *Rattlesnake root, Seneka snake root.* United States.

Root, *Senega, Senegæ radix,* diaphoretic, diuretic, used in America against the bite of the rattlesnake, either in powder ℈j. to ℈ij., or ℥j. boiled in ℔jss., of water to ℔j., and given by ℥ij. at a time; black snake root is used for it. (G.) Root unpleasant, somewhat acid and acrid; it acts as a sudorific and expectorant in small doses, and is an emetic and cathartic in large ones; employed in pneumonia, asthma, croup, dropsy, chronic rheumatism, and especially in such uterine complaints as amenorrhœa; Dr. Archer has extravagantly praised it in cynanche trachealis. (L.) An exceedingly valuable remedy in the latter stages of bronchial or pulmonary inflammation, when this disease occurs in aged, debilitated, and torpid constitutions. It appears to re-establish a healthy condition of the secreting organs, to promote the resolution of the morbid deposits, and to give strength to the system. (Pereira.)

POLYGALA THEEZANS. Java, Japan.

Mixed with tea in Japan.

POLYGALA ULIGINOSA. (Rchb.) *P. amara.* Germany.

Whole plant bitter, much extolled by Van Swieten and others in pulmonary complaints and spitting of blood. (L.)

POLYGALA VENENOSA.

Said by Commerson to be a poisonous plant, so much dreaded by the Javanese, that they are unwilling to touch it. (L.)

SOULAMEA. (De Cand. i. 335.)

SOULAMEA AMARA. *Rex amaroris.* Coast of Moluccas.

All the parts, especially the roots and fruit, intensely bitter; employed in the Malayan Archipelago with extraordinary success in cholera and pleurisy, and most valuable as a febrifuge. (L.) Also used in ague. (O'Sh.)

ORDER 20.—PITTOSPOREÆ. (De Cand. i. 345.)

Sepals five, deciduous, either distinct, or partially cohering, æstivation imbricated; *stamens* five, hypogynous, sometimes slightly cohering, æstivation imbricated, distinct, alternate with the petals; *ovary* single, distinct, with the cells or the placenta 2—5 in number, and many seeded; *style* one; *stigmas* equal in number to the placentæ; *fruit* capsular, or berried, with many seeded cells, which are sometimes incomplete; *seeds* often covered with a glutinous or resinous pulp; *embryo* minute, near the hilum, lying in fleshy albumen; *radicle* rather long; *cotyledons* very short. *Trees* or *shrubs; leaves* simple, alternate, without stipules, usually entire; *flowers* terminal or axillary, sometimes polygamous.

Several species have a liquid resin round the seeds which deserves examination. (O'Sh.)

BILLARDIERA. (De Cand. i. 345.)

BILLARDIERA SCANDENS. New Holland.

Flesh of the berry eatable.

PITTOSPORA. (De Cand. i. 346.)

PITTOSPORA TOBIRA. Japan.

Seeds surrounded by a kind of resinous birdlime.

ORDER 21.—CARYOPHYLLEÆ. (De Cand. i. 351.)

Calyx of four or five sepals, continuous with the pedicle, either free or united into a tube, imbricated in æstivation, generally persistent; *petals* four or five, (very rarely none,) inserted on a more or less elevated torus, hypogynous, alternate with the sepals, unguiculate, with an entire or bifid spreading limb, often furnished with petaloid scales in the throat; *stamens* equal to, or double the number of the petals, inserted on the torus; *filaments* subulate; *anthers* two-celled; *ovary* simple, 2—5 valved, inserted at the apex of the torus, and crowned by an equal number of styles; *capsule* of 2—5 valves, united at the base, opening at the apex, either one-celled or 2—5 celled; septa protruding from the middle of the valves, incomplete, or continuous to the axis; *placenta* central; *seeds* numerous, rarely few or defined; *albumen* mealy; *embryo* curved round the albumen, rarely straight; *radicle* directed towards the hilum. *Herbs* or under *shrubs* with knotted stems, opposite, entire, and often connate *leaves* and terminal *flowers.*

ARENARIA. (De Cand. i. 400.)

*ARENARIA MEDIA. (E. B. 958.) *A. marina, Sea-side sandwort, Sea spurry.*

Fl. purple. June, July. Annual. Sea-coast.

Externally used in whitlows and other inflammations; very succulent; when pickled sold for samphire.

*ARENARIA PEPLOIDES. (E. B. 189.) *Adenarum p. Sea sandwort.*

Fl. white. July. Perennial. Sandy shores.

Herb fermented and made into Iceland beer.

Cerastium. (De Cand. i. 414.)

*Cerastium aquaticum. (E. B. 538.) *Alsine aquatica major*, *Great marsh chickweed.*

Fl. white. July. Perennial. Sides of ditches in England.

*Cerastium arvense. (E. B. 93.) *Field chickweed, Corn mouse-ear.*

Fl. white. June, July. Perennial. Dry sandy places in England.

*Cerastium viscosum. (E. B. 790.) *Alsine hirsuta altera viscosa. Narrow-leaved mouse-ear chickweed.*

Fl. white. April, September. Annual. Pastures.

*Cerastium vulgatum. (E. B. 789.) *Alsine hirsuta myosotis, Broad-leaved mouse-ear chickweed.*

Fl. white. April, June. Annual. Fields and pastures.

Cooling moistening herbs, nourishing cattle; used as spinach.

Dianthus. (De Cand. i. 355.)

Dianthus arenarius. *Maiden pink, Stone pink.* North of Europe.

*Dianthus armeria. (E. B. 317.) *Caryophyllus pratensis, Deptford pink.*

Fl. rose-coloured with white spots. July, August. Annual. Fields.

**Dianthus barbatus. (Bot. M. 205.) *Sweet William.*

Fl. pink, purple, or white, variously spotted. June, August. Perennial. South of France.

Dianthus carthusianorum. *Œillet des chartreux.* Europe.

*Dianthus caryophyllus. (E. B. 214.) *Caryophyllus ruber, Clove gilliflower, Clove pink, Carnation.*

Fl. pink, white, or variegated. July. Perennial. South of England.

Dianthus superbus. *Fringed pink.*

The flowers, *tunicæ*, of D. caryophyllus are cephalic, cordiac, antispasmodic, nervine; in doses of ℈j. to ʒj. useful in heartburn and contagious fevers; the odour is improved by drying. The other species of dianthus have similar qualities, but weaker. (G.)

Gypsophila. (De Cand. i. 351.)

Gypsophila muralis.	France, Germany.
Gypsophila saxifraga.	South of Europe.
Gypsophila struthium.	Spain.

Lithontriptic, and used for soapwort in lues; saponaceous and are used for washing.

Holosteum. (De Cand. i. 393.)

*Holosteum umbellatum. (E. B. 27.) *Caryophyllus arvensis, Field pink, Umbelliferous jagged chickweed.*

Fl. white, or reddish. April. Annual. Rare. Norfolk.
Cooling, moistening, used as spinach.

LYCHNIS. (De Cand. i. 393.)

LYCHNIS CÆLI ROSA. *Agrostemma cœli rosa.* Sicily.

**LYCHNIS CORONARIA. (Bot. Mag. 24.) *Agrostemma coronaria, Crown lychnis.*

Fl. red or white, single or double. July, August. Perennial. Native of Italy.

LYCHNIS FLOS JOVIS. *Agrostemma flos Jovis.*

*LYCHNIS GITHAGO. (E. B. 741.) *Agrostemma githago, Corn cockle.*

Fl. purple. June, July. Annual. Corn-fields.
Roots vulnerary, astringent; seeds purgative.

*LYCHNIS DIOICA. (E. B. 1580.) *White campion, Bachelor's button.*

Fl. white. June, July. Perennial. Road-sides, hedges.

*LYCHNIS FLOS CUCULI. (E. B. 573.) *Cuckoo flower, Meadow pink, Ragged robin.*

Fl. rose-coloured. June. Perennial. Moist meadows.

*LYCHNIS VISCARIA. (E. B. 788.) *Red German catchfly.*

Fl. rose-coloured. June. Perennial. Scotland.
Roots cordial.

SAPONARIA. (De Cand. i. 365.)

*SAPONARIA OFFICINALIS. (E. B. 1060.) *Saponaria, Soap wort.*

Fl. rose-coloured. July, August. Perennial. Road sides.
Attenuating, opening, antivenereal, saponaceous.

SAPONARIA VACCARIA. *Cow basil, Vaccaria.* Europe.

Seed heating, diuretic; the plant is said to increase the lacteal secretions of cows fed upon it.

SILENE. (De Cand. i. 367.)

*SILENE ARMERIA. (E. B. 1398.) *Behen album, Lobel's catch fly.*

Fl. purple. July. Annual. Commonly in gardens.

SILENE BEHEN.

*SILENE INFLATA. (E. B. 1081.) *Behen album, Cucabalus behen, Spatling poppy, White behen, White bottle.*

Fl. white. August. Perennial. Pastures and road sides.

SILENE MUSCIPULA. *Red catch fly.* Spain.
Roots cordial.

SILENE SAXIFRAGA. *Saxifraga antiquorum, Great saxifrage.* Alps.

Herb used in calculous disorders.

SILENE VIRGINICA. United States.
Root said to be anthelmintic.

SPERGULA. (De Cand. 394.)

*SPERGULA ARVENSIS. (E. B. 1535.) *Corn spurrey.*
Fl. white. June, August. Annual. Corn fields.

STELLARIA. (De Cand. i. 396.)

STELLARIA ALSINE.
*STELLARIA HOLOSTEA. (E. B. 511.) *Greater Stich wort.*
Fl. white. May. Perennial. Hedges, &c.
STELLARIA MEDIA. (E. B. 537.) *Alsine media, Chickweed.*
Fl. white. The whole year. Annual. Road sides.

All cooling, moistening herbs, nourishing cattle; used as spinach.

ORDER 22. LINEÆ. (De Cand. i. 423.)

Sepals 3—4, frequently five, persistent; *petals* equal in number to the sepals, hypogynous, with a twisted æstivation, caducous; *stamens* equal in number to the petals, and alternating with them, cohering at the base into a monadelphous ring, with an abortive filament or tooth between each; *anthers* ovate, innate; *ovary* sub-globose, with as many cells as there are sepals, rarely fewer; *styles* equal in number to the cells; *capsule* globose, pointed with the base of the styles, opening with two valves at the apex: *seeds* in each cell single, ovate, compressed, inverted; *albumen* often absent; *embryo* straight, fleshy. *Herbs* or *shrubs*, with entire exstipulate *leaves*, and pedunculated inflorescence.

LINUM. (De Cand. i. 423.)

*LINUM CATHARTICUM. (E. B. 382.) *Dwarf wild flax, Mill mountain, Purging flax.*
Fl. white. June, July. Annual. Pastures.

Bitter, and powerfully cathartic; a drachm of the dried plant is a convenient purgative, or we may employ an infusion of a handful of the recent plant. (Pereira.) Purgative in doses of ʒss. to ʒj. (G.) Leaves, when fresh, strongly purgative, but uncertain in their action. (O'Sh.)

LINUM SELAGINOIDES. Montevideo and Chili.
Herb bitter and aperitive.

*LINUM USITATISSIMUM. (E. B. 1357.) *Common flax.*
Fl. purplish blue. July. Annual. Corn fields.

Seeds, *Lini usitatissimi semina, Linseed, Lini semina,* emollient, diuretic; meal, *Lini farina,* used for cataplasms: imported from Russia, Poland, and North America; yield oil, *Lini oleum, Linseed oil*; *Lini placenta, Linseed cake,* left after the oil has been pressed out, used for feeding cattle and broken-winded horses. (G.)

ORDER 23. MALVACEÆ. (De Cand. i. 429.)

Sepals usually five, rarely three or four, more or less united at the base, valvate in æstivation, often bearing external sepals or bracts, forming an involucre, or outer calyx; *petals* alternating with, and equal in number to, the sepals, hypogynous, with a contorted æstivation, either distinct or adhering to the lower part of the tube of the stamens; *stamens* numerous, or as many as the petals, hypogynous, filaments monadelphous; *anthers* one-celled, reniform, bursting transversely; *ovary* of many carpels, verticillate round an axis, sometimes distinct; *styles* equal in number to the carpels; either united or distinct; *stigmas* as many as the carpels, more or less distinct; *fruit* capsular, or baccate, having one, two, or many-seeded carpels; *seeds* usually ovate, often hairy; *albumen* none; *embryo* straight, with cotyledons twisted like a chrysalis. *Herbs, shrubs,* or *trees,* with alternate divided stipulate *leaves,* and stellate hairs.

ALTHÆA. (De Cand. i. 436.)

*ALTHÆA HIRSUTA. (E. B. 2674.)

Fl. pale rose-coloured. August, September. Perennial. Hedges.

Leaves emollient, cleansing to ulcers; seeds opening, diuretic.

*ALTHÆA OFFICINALIS. (E. B. 47.) *Althæa, Bismalva, Ibiscus, Marsh mallow.*

Fl. pale rose-colour. August, September. Perennial. Hedges and pastures.

Roots, *althææ radix*, and leaves, *althææ folia*, very emollient, particularly useful in diseases of the bladder; flowers pectoral.

ALCEA. (De Cand. i. 417.)

**ALCEA ROSEA. *Malva arborea, Holyhock.*

Fl. various in colour. July, September. Biennial. From India.

Same qualities as Althæa officinalis.

GOSSYPIUM. (De Cand. i. 456.)

GOSSYPIUM BARBADENSE. West Indies.

Seeds pressed for oil.

GOSSYPIUM HERBACEUM. *Bombax, Cotton.* India, America.

Seeds pectoral, antiasthmatic; down of seeds used as a caustic instead of moxa; young buds very mucilaginous, pectoral.

HIBISCUS. (De Cand. i. 446.)

HIBISCUS ABELMOSCHUS. *Bamia moschata, H. moschatus, Musk ochra, Musk mallow.* East Indies, South America.

Seeds, *Musk seeds, Grains d'ambrette,* smell like musk; are cordial, cephalic, stomachic, and emetic; used in coffee and mixed with hair-powder.

HIBISCUS CANNABINUS.

Acidulous.

HIBISCUS ESCULENTIS. *Abelmoschus esculentus, Okra.* West Indies.

Unripe pod used as a potherb; contains a kind of gelatine; used in hot countries as a means of thickening soup; decoction of leaves and pods demulcent, pectoral.

HIBISCUS ROSA SINENSIS.

Flowers astringent.

HIBISCUS SABDARIFFA. *Guinea sorrel, Red sorrel.*

Herb acid, refreshing, diuretic.

HIBISCUS SURATENSIS.

Acidulous.

LAVATERA. (De Cand. i. 438.)

*LAVATERA ARBOREA. (E. B. 1841.) *Malva arborea, Tree mallow.*

Fl. pink. July, August. Perennial.

LAVATERA THURINGIACA. Germany.

LAVATERA TRILOBA. Spain.

Have the same qualities as Althæa officinalis.

MALVA. (De Cand. i. 430.)

MALVA ALCEA. *Alcea, Vervain mallow.* Europe and Asia.

MALVA CRISPA. *Curl-leaved mallow.* Europe and Asia.

*MALVA MOSCHATA. (E. B. 754.) *Musk mallow.*

*MALVA ROTUNDIFOLIA. (E. B. 1092.) *Dwarf mallow.*

*MALVA SYLVESTRIS. (E. B. 671.) *M. communis, Common mallow.*

The English species have purple or rose-coloured flowers. Flower from June to August, and are perennial.

All these herbs are eminently emollient and moistening; proper to cool and open the belly; flowers pectoral.

PAVONIA. (Lindl. Fl. Med. 142.)

PAVONIA DIURETICA. Brazil.

Decoction used with success in cases of dysuria. (L.)

SPHÆRALCEA. (Lindl. 142.)

SPHÆRALCEA CISPLATINA. Brazil.

Decoction used in Brazil in inflammations of the bowels, and generally as the marsh mallows of Europe.

SIDA. (De Cand. i. 459.)

SIDA ABUTILON. *Indian mallow.* East Indies.

Has the same qualities as Althæa officinalis.

SIDA CORDIFOLIA. East Indies and Africa.

Mixed with rice, used in dysentery.

SIDA INDICA. East Indies.

Used in India as an emollient.

SIDA RHOMBOIDEA. East Indies.

Emollient, used as marsh mallows.

URENA. (De Cand. i. 441.)

URENA LOBATA. East Indies.

Decoction used in Brazil as a remedy in windy colic; flowers in inveterate coughs as an expectorant.

ORDER 24. BOMBACEÆ. (De Cand. i. 475.)

Calyx either naked, or surrounded with an involucre, consisting of five sepals, united at the base; *petals* five, or none; *stamens* definite, or indefinite, variously monadelphous;

anthers one-celled; *carpels* of ovary five, rarely ten, sometimes distinct, sometimes closely cohering, bursting in various ways; *styles* either distinct, or more or less cohering; *fruit* various; *seeds* often woolly, or surrounded with a pulp, some without albumen, with corrugated or convoluted cotyledons, others albuminous, with flat cotyledons. *Trees* or *shrubs*, with alternated, bistipulated *leaves*; *pubescence* often stellate.

ADANSONIA. (De Cand. i. 478.)

ADANSONIA DIGITATA. *Baobab.* Africa.

Emollient; fruit acidulous, used in pulmonary affections, and instead of tamarinds.

BOMBAX. (De Cand. i. 478.)

BOMBAX MALABARICUM. *B. heptaphyllum.* India.

Yields a gum resin called *Moocherus;* roots constitute the *Sufed mooslie* of the Hindoos. Much used in India as a nutritious demulcent for convalescent persons. (O'Sh.)

CAROLINEA. (De Cand. i. 478.)

CAROLINEA PRINCEPS. *Pachera aquatica, Sergeant, Wild cacao.* Guiana.

Seeds esculent, similar to almonds.

ERIODENDRON. (De Cand.)

ERIODENDRON ANFRACTUOSUM. *Bombax pentandrum, Cotton tree.* India.

Yields *Cotton tree gum.* (G.) Gum given in solution with spices, in bowel complaints. (O'Sh.)

ORDER 25. BYTTNERACEÆ. (De Cand. i. 481.)

Calyx either naked, or surrounded with an involucre; *sepals* five, more or less joined at the base, with a valvate æstivation; *petals* five, hypogynous, alternate with the sepals, convoluted in æstivation, varying in form, rarely unequal, or none; *stamens* either equal in number to the petals and sepals, or some multiple of them; *filaments* more or less monadelphous; *anthers* two-celled, turned outwards; *carpels* five, very rarely three, distinct, or cohering into one ovary; *styles* as many as the carpels, whether distinct or cohering; *albumen* oily, or fleshy, rarely none; *embryo* straight, with an inferior radicle; *cotyledons* either foliaceous, flat, and plaited, or rolled round the plumule, sometimes very thick, but this only in the seeds without albumen. *Trees* and *shrubs*, with alternate simple *leaves*; *inflorescence* variable.

BYTTNERIA. (De Cand. i. 487.)

BYTTNERIA CORDATA. Peru.

Leaves applied to bites of spiders.

GUAZUMA. (De Cand. i. 485.)

GUAZUMA TOMENTOSA. *Bubroma guazuma, Bastard cedar.* South America.

Old bark employed as a sudorific; young bark mucilaginous; employed for cleansing sugar. (O'Sh.)

GUAZUMA ULMIFOLIA. *Theobroma guazuma.* South America and West Indies.

Young bark used, on account of its mucilage, to clarify sugar.

HELICTERES. (Lindl. 138.)

HELICTERES SACAROLHA. Brazil.

Decoction of roots administered in Brazil in venereal complaints.

KYDIA. (De Cand. i. 500.)

KYDIA CALYCINA. East Indies.

Bark used in India to clarify sugar.

PENTAPETES. (De Cand. i. 498.)

PENTAPETES PHŒNICIA. *Muchucunda.* East Indies.

Flowers expressed yield a mucilaginous and refrigerant juice used in gonorrhœa.

SOUTHWELLIA. (Lindl. 136.)

SOUTHWELLIA TRAGACANTHA. *Sterculia tragacantha.* Sierra Leone.

Known at Sierra Leone as the *Tragacanth tree*, as it exudes a gum resembling Tragacanth when wounded.

STERCULIA. (De Cand. 481.)

STERCULIA ACUMINATA. *Kola.* Africa.

Fruit, *Kola nuts*, much esteemed in Africa, as brackish water tastes well after eating them.

STERCULIA BALANGHAS. *Cleompanos minor, Cavalam.* Malabar.

Pulp of fruit esculent; kernels toasted and eaten.

STERCULIA FŒTIDA. *Cleompanos major, S. digitifolia, Karil root.*

Leaves and fruit in decoction, useful in pains of the joints. (G.) Leaves considered aperient, and a decoction of the fruit mucilaginous and astringent. (O'Sh.)

STERCULIA PLATANIFOLIA.

Seeds pressed for their oil.

STERCULIA URENS. *Cavallium urens.* Hindostan.

Yields a gum extremely like Tragacanth.

THEOBROMA. (De Cand. i. 484.)

THEOBROMA CACAO. *Cacao.* South America.

Seeds, *Chocolate nut, Island cacao, Cacao des antilles, Cacao des isles, Cacao antillanum*, flattened, covered with a red paper-like envelope; kernel brown, fat, tastes agreeable, slightly acrid, yields oil; chocolate and cacao are made from it. *Caracca, Cacao Caraque, Cacao Caraccense*, seed larger, round, covering reddish brown; kernel pale brown, friable, dry, and strong tasted, is often mouldy, as having been buried thirty or forty days, to get rid of some of its acridness.

WALTHERIA. (Lindl. 136.)

WALTHERIA DOURADINHA. Brazil.

Used in complaints of the chest, and also in venereal complaints.

ORDER 26. TILIACEÆ. (De Cand. i. 503.)

Calyx externally naked; *sepals* 4—5, with a valvular æstivation; *petals* equal in number to the sepals, alternating with them, frequently having a little pit at their base, entire, very seldom wanting; *stamens* hypogynous, distinct, generally indefinite in number; *anthers* two-celled, dehiscing longitudinally; *glands* as many as the petals, opposite to them, adhering to the stalk of the ovary; *ovary* single, formed of from four to ten carpels; *styles* as many as the carpels, united into one; *stigmas* as many as the carpels, free; *capsule* many-celled; *seeds* numerous in each cell; *embryo* erect; *cotyledons* flat, leafy. *Trees* or *shrubs*, with simple bistipulate *leaves*.

ABATIA. (De Cand. i. 503.)

ABATIA PARVIFLORA. Peru.

ABATIA RUGOSA. Peru.

Leaves dye black.

CORCHORUS.

CORCHORUS CAPSULARIS. *Ghee, Naltha paut.*

CORCHORUS OLITORIUS. *Bunghee paut, Jew's mallow.* Tropical parts, Asia, Africa, America.

Leaves emollient, eaten as spinach in hot countries. (G.) Infusion of the leaf much employed as a fever drink in India. (O'Sh.)

GREWIA. (De Cand. i. 508.)

GREWIA FLAVA. *Brandewyn bosh.* Cape of Good Hope.

Berries make a spirituous liquor.

GREWIA ORIENTALIS. East Indies.

Fruit and leaves boiled in water to make a kind of drink.

GREWIA MICROCOS. *Microcos paniculata, Schageri cottan.* East Indies.

Juice, with sugar, used as an astringent gargle; also internally in dysentery.

TILIA. (De Cand. i. 512.)

TILIA INTERMEDIA. (E. B. 610.) *T. Europea, Linden, Bast, Lime-tree.*

Fl. straw-coloured. July. Tree. Woods, &c.

Flowers antispasmodic, cephalic; bark and leaves drying, astringent, diuretic, emmenagogue; berries astringent; slime of the bark used in burns and wounds.

ORDER 27. ELEOCARPEÆ. (De Cand. i. 519.)

Sepals 4—5, with a valvate æstivation, no involucre; *petals* 4—5, hypogynous, alternate with the sepals, lobed, or fimbriated at the apex; *torus* glandular, somewhat projecting; *stamens* hypogynous, or rarely perigynous, some multiple at the sepals (8—30); *filaments* short, distinct; *anthers* long, filiform, four-cornered, two-celled, the cells opening by an oblong pore at the apex; *ovary* many-celled; *style* one, very rarely four; *seeds* one, two, or more, in each cell; *albumen* fleshy; *embryo* erect, with flat foliaceous cotyledons. *Trees* or *shrubs*, with alternate *leaves* and racemose *flowers*.

Dicera. (De Cand. i. 520.)

Dicera serrata. *Elæocarpus serratus, Ganitrum.*

Elæocarpus. (De Cand. i. 519.)

Elæocarpus integrifolius. East Indies, New Zealand.

Elæocarpus oblongus. *Ganitrum oblongum.*

Fruit eaten either raw, or preserved in sugar, or salt and vinegar; strengthening.

Vallea. (De Cand. i. 520.)

Vallea cordifolia. Peru.

Leaves dye cloth yellow.

Order 28. DIPTERACEÆ. (Lindl. Nat. Order 74, p. 98.)

Calyx tubular, five lobed, unequal, persistent, and afterwards enlarged, naked at base, æstivation imbricated; *petals* hypogynous, sessile, often combined at the base, æstivation contorted; *stamens* indefinite, hypogynous, distinct, or slightly and irregularly polyadelphous; *anthers* innate, subulate, opening longitudinally towards the apex: *filaments* dilated at base; *ovary* superior, without a disk, few-celled; *ovules* in pairs, pendulous; *style* single, stigma simple; *fruit* coriaceous one-celled by abortion, three-valved, or indehiscent, surrounded by the calyx, having tough, leafy, enlarged permanent divisions, which crown the fruit; *seed* single, without albumen; *cotyledons* twisted and crumpled, or unequal, and obliquely incumbent; *radicle* superior. Elegant *trees*, abounding in resinous juice, with alternate *leaves*, and large *flowers*, in terminal racemes or panicles.

Dipterocarpus.

Dipterocarpus trinervis. Java.

Yields a resinous secretion called *Gurgun*, used by the natives as salve for inveterate ulcers, when it is desirable to excite the wound and correct the pus; dissolved in spirits of wine, it has the same effect as balsam of copaiba upon the mucous membranes, and hence has been recommended as a substitute for that article. (L.) Several other species yield the same substance. (O'Sh.)

Dryobalanops.

Dryobalanops aromatica. *Shorea camphorifera.* Java.

This tree contains both oil and camphor, in a cavity or cavities occupying the centre of the tree; this kind of camphor is very valuable, but on account of its high price is not brought to Europe, but is chiefly exported to China and Japan, where it is highly valued for its stimulant tonic properties.

Shorea.

Shorea robusta. *Roxb.* East Indies.

Yields the resinous substance called *Dammer*, in India used for various economical purposes. (L.) Dammer unites with the oxide of lead and forms plaisters. (O'Sh.)

VATERIA.

VATERIA INDICA. *Elæocarpus copalliferus, Pænoe.* East Indies.

Exudes a resin like copal, which hardens of a deep amber colour; in its fluid state it is the *Pænoe* varnish of the south of India; it also yields *Moschat resin,* and *Pænoe tallow;* in its solid state it is the *Gum animi* of the shops. (G.) Candles are made of this resin in Malabar, which diffuse in burning an agreeable fragrance, give a fine clear light, with little smoke, and consume the wick without snuffing. (O'Sh.)

ORDER 29. CAMELLIEÆ. (De Cand. i. 529.)

Sepals 5—7, imbricated in æstivation, the inner one generally larger, sub-concave, coriaceous, deciduous; *petals* as many as the sepals, alternate with them, often subcoherent at the base; *stamens* numerous; the *filaments* filiform, monadelphous or polyadelphous at the base; *anthers* ellipsoid or round, versatile; *ovary* one, ovato-rotund; *styles* 3—6, filiform, more or less coherent; *capsule* three-celled, three-valved, dehiscent; three-seeded by abortion; valves sometimes septiferous in the middle, sometimes having the margin inflexed; *seeds* few, large, thick, attached to the central margin of the septa; *albumen* none; *cotyledons* large, thick, oleaginous, plano-convex, and articulated at the base; *radicle* very short, obtuse, turned towards the hilum; *plumula* scarcely perceptible, ascending. Evergreen *shrubs* or *trees,* with alternate coriaceous *leaves,* and large white, pink, red, or yellow *flowers.*

CAMELLIA. (De Cand. i. 529.)

**CAMELLIA JAPONICA. (Bot. Mag. 42.) *Common camellia, Japanese camellia.*

Fl. pink, white, red, or variegated. February, May. Small tree. Japan.

Leaves frequently mixed with those of tea by the Chinese.

CAMELLIA SESANQUA. Japan.

Leaves used for those of tea; are odoriferous, and are also added to tea to scent it; seeds expressed for their oil.

CAMELLIA DRUPIFERA. Cochin China.

Seeds expressed for their oil.

THEA. (De Cand. i. 530.)

THEA CHINENSIS.

Two varieties of this plant are cultivated in China, they are—

a THEA VIRIDIS. Green tea.

Doubtful whether a distinct species, or only the young leaves of the bohea, slowly dried in the shade: the infusion narcotic in a small dose, and appeases the qualms of intoxication, but taken largely brings on watchfulness, nervous agitation, and is even emetic: this irritability is best allayed by butter-milk. The green teas of Des Guignes are,—

1. SONGLO TEA, (from the place where it is grown,) has a leaden cast, the infusion is green, the leaves are longer, and

more pointed than the black teas; the inferior sorts have yellow leaves and a smell of sprats.

2. HYSON TEA, (*he tchune*, first crop,) is of a leaden cast, the infusion is a fine green, the leaves are handsome, without spots, and open quite flat; it has a strong taste, and a slight smell of roasted chesnuts.

3. *Tcheu tcha*, of which he gives no characters.

Besides these, there are imported into England these green teas. *Hyson skin*, or *bloom tea*, being the large loose leaves of the hyson; a faint delicate smell; infusion a pale green; the bloom is given by means of indigo heated under it.—*Superior hyson skin*, intermediate between hyson and hyson skin. *Gunpowder tea*, a superior hyson in small round grains, of a blooming, greenish hue. *Chelian*, or *cowslip hyson*, a scented hyson, mixed with small berries, that give it a cowslip flavour. The Ankoy teas, obtained from An Khe, have the same appearance as the Canton teas, but are inferior in flavour, and generally sell from 4*d.* to 1*s.* a lb. lower. They are supposed to be picked from wild tea plants. The leaves of tea having little or no smell, they are rendered fragrant by mixing with them the leaves of Olea fragrans, and Camellia sesanqua. The leaves of Polygala theezans, and of Ramnus theezans, are also mixed with China tea.

Mr. Warington has lately discovered that the bloom and much of the colour of green tea is produced by means of Prussian blue, instead of being caused by drying the leaves upon copper plates, as formerly supposed. Large quantities of Prussian blue were formerly sent from this country to China, but the demand has ceased for some years, owing possibly to the circumstance of the Chinese having discovered the method of making it themselves.

β. THEA BOHEA. *Black tea.*

Des Guignes gives the following characters of the different kinds of black tea, as he observed them in China, using the common English orthography, with their usual price at Canton; they are supposed to be picked from old trees, and are dried in shallow pans over charcoal fires.

1. BOHEA TEA. (*Vo he*, the name of a place,) is of a black cast, and yields a deep yellowish infusion; sells in China for 12 to 15 taels.

2. CONGOU TEA, (*cong fou*, great care,) the infusion is lighter than that of bohea, rather green, and seldom of an agreeable smell; preferred by the Chinese and Indian islanders for their own use.

3. SOUTCHONG TEA, (*se ow chong*, a very little sort,) the infusion is a fine green, smells agreeably; the leaves ought to have no spots on them.

4. Pekao tea, (*pe kow*, white leaf bud,) the infusion is light and rather green, has a violet scent, and a very fine perfume in the mouth.

5. Imperial tea, (*mao tcha*,) has a green cast, the infusion is also green; the leaves large and of a fine green: has a slight smell of soap. To these may be added, *Campoi tea*, which is intermediate between congou and soutchong.

6. Padre tea, (*pou chong tcha*,) a very fine soutchong, imported in pound papers, for presents; being the best and most delicious. *Caper tea*, made into balls with gum, and scented, imported only in small boxes.

China tea is not turned black by being put into water impregnated with sulphuretted hydrogen gas, nor does it tinge spirit of hartshorn blue. The infusion is amber-coloured, and is not reddened by adding a few drops of oil or spirit of vitriol to it. The leaves of speedwell, wild germander, black currants, syringa or mock orange, purple-spiked willow-herb, sweetbriar, cherry-tree, sloe, are all substituted for tea, either singly or mixed. In foreign countries a variety of plants are used instead of Chinese tea, as *Capraria bifolia*, *Alstonia theæoformis*, *Gualtheria procumbens*, *Myrtus ugni*, *Leptospermum scoparium*, *Ceanothus Americanus*, *Prinos glaber*, *Ledum latifolium*, *Chenopodium ambrossioides*, *Monarda kalmiana*, *Psoralia glandulosa*, *Cassine peragua*. *Zenopoma thea Sinensis* is beginning to be cultivated in France as a substitute for Chinese tea. In Hindoostan, those with whom the common tea does not agree, use an infusion of lemon grass, or of *Ocymum album*.

Order 30. AURANTIACEÆ. (De Cand. 535.)

Calyx urceolate, or campanulate, subadnate to the disk, short, 3—5 toothed, withering; *petals* 3—5, broad at the base, free, or slightly united together, inserted on the outside of a hypogynous disk; *stamens* either equal in number to, or some multiple of, the petals, inserted on the sides of the hypogynous disk; *filaments* flattened at the base, free, or variously united, always free at the apex; *anthers* terminal, innate, erect: *ovary* ovate, many-celled; *style* one; *stigma* thick, subdivided; *fruit* pulpy, separated into many cells by the membranous partitions; *seeds* attached to the inner angles of the carpels, numerous or solitary, usually pendulous, exalbuminous; *embryos* sometimes many, straight; *raphe* and *chalaza* distinct. *Trees* or *shrubs*, almost always smooth, and filled everywhere with little transparent receptacles of volatile oil, with alternate, often compound *leaves*, articulated on the stem.

Ægle. (De Cand. i. 538.)

Ægle marmelos. *Cratæva marmelos*, *Bilva* or *Mahura*. East Indies.

Fruit, nutritious, warm, cathartic, delicious; its efficacy in removing habitual costiveness has been proved by constant experience; root, bark, and leaves, reckoned refrigerants by the Malabar physicians. (L.) The mucus of the seeds is for some purposes a very good cement. (O'Sh.)

BERGERA. (De Cand. i. 537.)

BERGERA KONIGII. Coast of Coromandel.

Bark and root used as stimulants by the natives of India, and employed externally against the bites of poisonous animals; green leaves prescribed to be eaten raw in dysentery, also bruised and applied externally to cure eruptions. (L.) An infusion of the toasted leaves used by the Hindoos to stop vomiting. (O'Sh.)

CITRUS. (De Cand. i. 539.)

**CITRUS AURANTIUM. *C. sinensis, China orange, Common orange, Sweet orange.*

Fl. white. June. Small tree. Cultivated in gardens and greenhouses.

Fruit sweet, imported from Faro, Lisbon, Port St. Michæl's; price very variable; juice of the fruit contains a saccharine, as well as an acid matter; mixed with salt is a common purge in the West Indies; flowers, *naphæ*, sweet scented, used to make orange flower water, are collected every morning in May and June, for thirty miles round Paris, from both public and private gardens; buds, *Aurantiæ flores*, that fall from the trees, used to make orange-flower water; *Flores aurantium conditi, Candied orange flowers*, orange flowers freed from their cups, stamina, and pistils; four ounces are put into lbij. of sugar, boiled to a candy height, and poured on a slab, so as to be formed into a cake; stomachic, antispasmodic; *Malta orange*, pulp red, juice very sweet; *Chota chia, East Indian small clove orange*, rind used to make the best orange marmalade; *East Indian country orange, Koula*, pulp austere and coarse; rind added in small quantity to orange marmalade to give it an agreeable flavour. (G.) The leaves of the orange tree have been used in the form of powder, or infusion, in spasmodic diseases; the young unripe fruit, dried and turned in a lathe, are the issue peas of the shops; the rind is a mild tonic and aromatic, a large quantity said to be sometimes productive of mischief; juice refreshing in fevers; orange flowers yield the officinal *oleum aurantii*, or *oil of neroli*. (L.)

CITRUS DECUMANA. *Pampelmus, Shaddock.* West Indies. Fruit very large, esculent.

CITRUS LIMETTA. *C. l. bergamium, C. Bergamia, C. medica bergamotta, Limon bergamotta, Bergamot lemon tree.* Cultivated in the South of Europe.

Rinds of the fruit very thick, yield the essence or oil of bergamotte of the shops, used in medicine on account of its odour. (G.) Employed as a perfume only. (Pereira.)

**Citrus limonum. *Citrus medica acida, Lemon tree.*

Fl. white, externally purplish. June. Small tree; greenhouses.

Pulp juicy, very acid; juice of the fruit yields citric acid; when properly diluted, and slightly sweetened, it is a most agreeable and refreshing beverage; the essential oil of the rind recommended by Mr. Foote as a stimulant, in various inflammations of the eye; *peel* aromatic and stomachic, but does not agree with all stomachs. (L.) The fruit, *Limonia malus*, imported from Malaga and Lisbon, in chests, each lemon in a separate paper; juice of the fruit more acid than that of the citron; rind of the fruit, *Limonum cortex*, aromatic, not so hot as orange peel, yields essence of lemons; *Candied lemon peel, cortex limonum condita*, prepared as candied citron peel, a stomachic sweetmeat. (G.)

Citrus medica. *Citron.*

Fl. white, externally purplish. June. Small tree. Native of Asia.

Fruit, *Citria malus, citrus*, excites the appetite, stops vomiting, is acidulous, antiseptic, antiscorbutic, and used along with cordials, as an antidote to the manchineel poison; rind of the fruit, *Citri cortex*, aromatic, tonic, yields *essence de cedrat*; seeds bitter, vermifuge. *Candied citron peel, cortex citri condita*; soak the peels in water frequently changed, until their bitterness is exhausted, put them into syrup, until they become soft and transparent, then take them out and drain them; stomachic, used as a sweetmeat.

Lime tree. *Citrus medica acida, C. acida, C. limetta.* Fruit, *Lime, Limetta*, used to rub floors to cleanse them, and also to scent the rooms. Juice of the fruit very acid, and even acrid: used to acidulate spirituous drinks.

**Citrus vulgaris. *C. aurantium, C. bigaradia, Aurantium amarum, The Seville orange.*

Fl. white. June. Small tree. South Europe, Asia.

Leaves and flowers antispasmodic, cordial ʒss. to ʒj., *bis terve in die*, or in a decoction; fruit, *Seville orange, Aurantia malus, Aurantiæ baccæ*, imported from Seville. (G.) Rind of the fruit, *Aurantii cortex*, more bitter and tonic than that of the last species, and therefore more employed medicinally. (L.) Unripe fruit, *Orange peas, Curasso oranges, Baccæ aurantiæ, Aurantia curassoventia*, used to flavour liqueurs, and for issue peas; *Candied orange peel, Cortex aurantiarum condita*, made the same way as candied citron peel; stomachic. (G.)

Feronia. (De Cand. i. 538.)

Feronia elephantum. *Capittha, Elephant, or wood apple.* East Indies.

Both leaves and flowers exhale a powerful odour of anise. (L.) Young leaves employed by the native practitioners as a gentle stomachic stimulant in the bowel complaints of children; yields a gum, much resembling gum arabic in its chemical and sensible properties. (O'Sh.)

ORDER 31. HYPERICINEÆ. (De Cand. i. 541.)

Sepals 4—5, either more or less cohering, or wholly distinct, persistent, with glandular dots, often unequal, *i. e.* the two outer ones smaller, the three inner larger: *petals* 4—5, hypogynous, alternating with the lobes of the calyx, contorted in æstivation; *stamens* indefinite, hypogynous, in three or more parcels; *anthers* versatile; *filaments* long; *ovary* one, superior, free; *styles* numerous, long, sometimes united into one; *stigmas* simple, rarely capitate; *fruit* a capsule or berry of many valves, and many cells; cells as many as the styles; *placenta* entire and central, or multipartite, and affixed to the incurved margin of the valves; *seeds* very numerous, generally round; *embryo* straight; *radicle* inferior; *albumen* none. Herbaceous *plants* or *shrubs*, with a resinous juice, and opposite, entire, sometimes dotted *leaves*, occasionally alternate and crenelled, with generally yellow *flowers*.

ANDROSÆMUM. (De Cand. i. 543.)

*ANDROSÆMUM OFFICINALE. (E. B. 1225.) *Clymenum Italorum, Hypericum androsæmum, Park leaves, Tutsan.*

Fl. yellow. July. Hedges on gravelly soil.

Resolvent, attenuant. (G.) Leaves once much esteemed as vulnerary, still employed in cures of recent wounds by rustic nurses. (L.)

HYPERICUM. (De Cand. i. 543.)

HYPERICUM ASCYRON. *Ascyron, St. Peter's wort.* Siberia.

Seeds purgative, useful in sciatica.

HYPERICUM CORIS. *Coris, Bastard St. John's wort.* South of Europe.

Seeds diuretic, antispasmodic.

HYPERICUM PERFORATUM. (E. B. 295.) *Hypericum, Common St. John's wort.*

Fl. yellow, with a few black dots at the tips. July. Perennial. Hedges.

Resolvent, attenuant, nervine, employed in maniacal cases; contains resin; leaves astringent, give a good red dye to wool and oil; an infusion has been used in gargles and lotions.

VISMIA.

VISMIA GUIANENSIS. *Hypericum guianense.* Guiana.

Bark, when wounded, yields a gum resin, which, when dry, resembles gamboge; leaves and fruit also yield a similar secretion; it is purgative in doses of 7—8 grs.; a decoction of the leaves taken internally is valued as a cure for intermittent fevers. (L.) Several other species of *Vismia*, as *V. guttifera*, *V. sessilifolia*, &c., yield a similar secretion, known in Europe under the name of American or Mexican gamboge.

ORDER 32. GUTTIFERÆ. (De Cand. i. 557.)

Flowers hermaphrodite or unisexual; *sepals* 2—6, usually persistent, round, membranous, frequently unequal and coloured; *petals* hypogynous, from four to ten; *stamens* numerous, hypogynous, rarely definite; *filaments* of various lengths; *anthers* adnate, bursting inwards; *ovary* solitary, free; *style* very short, or none; *stigma* peltate, or radiate; *fruit* a berry, or drupe, or capsular, and opening by many valves, one or many-seeded; *seeds* with a thin membranous coat; *albumen* none; *embryo* straight; *cotyledons* thick. *Trees* or *shrubs*, yielding resinous juice, with exstipulate, generally opposite, coriaceous entire *leaves*, and numerous axillary or terminal *flowers*.

CALOPHYLLUM. (De Cand. i. 562.)

CALOPHYLLUM CALABA. *Santa Maria tree.* Travancore.

Yields *Oleum Sanctæ Mariæ.* (G.) Produces the true East Indian *Tacamahaca.* (L.)

CALOPHYLLUM INOPHYLLUM. *C. tacamahaca, Alexandrian laurel, Poonamarum, Poon-wood tree.* India.

Yields *Mauritius tacamahaca.* (G.) Seeds yield an oil; resin of roots, supposed by some authors to be the same as the *Tacamahaca* of the isle of Bourbon. (L.)

CANELLA. (De Cand. i. 563.)

CANELLA ALBA. *Wintera canella, Wild cinnamon.* West Indies, America.

Berry aromatic, used as a spice; bark, *White cinnamon, Canellæ cortex*, rolled, peeled, whitish, thicker than cinnamon, pungent and sweet smelling; warm, stimulant, antiscorbutic, dose gr. x. to ʒss., used also as a stimulatory; *Alouchi* is said to be the produce of this tree. (G.) Bark yields by distillation a warm aromatic oil, reckoned carminative and stomachic; it is often mixed with oil of cloves in the West Indies; in this country it is principally employed as an aromatic addition, either to tonics or purgatives, in debilitated conditions of the digestive organs. Canella bark has also been employed in scurvy. (Pereira.)

CLUSIA. (De Cand. i. 558.)

CLUSIA ALBA.
CLUSIA ROSEA. America.

Juices used as pitch.

GARCINIA. (De Cand. 560.)

GARCINIA CAMBOGIA. *Cambogia gutta, Cambooge tree.* India.

Produces *gamboge.* (G.)

GARCINIA MORELLA. *Hebradendron cambogioides.* (L.) *Gokatu, or Kana goraka.* Ceylon.

This plant has been proved to yield a kind of gamboge, not distinguishable chemically or medicinally from that of Siam: it is, however, doubtful whether the plant producing that is the same as this; it has also been proved by Drs. Graham and Christison, that the gambogioid exudation from *Stalagmitis cambogioides*, *Garcinia Cambogia*, and *Xanthochymus pictorius*, differ from the real drug in texture, effects, colour, and chemical composition. (L.)

GARCINIA PICTORIA. (Roxbh.) *Hebradendron pictorium.* (L.) India.

Roxburgh says, he uniformly found the gamboge from this tree, even in its crude unrefined state, superior in colour, while recent, to any other kind he had tried, but not so permanent as that from China. (L.) Several other species of *Garcinia* produce gamboge. (O'Sh.)

STALAGMITIS. (De Cand. i. 562.)

STALAGMITIS CAMBOGIOIDES. Ceylon.

Produces a kind of gamboge.

STALAGMITIS OVALIFOLIA. (L.) *Xanthochymus ovalifolius.* South of India, Ceylon.

Dr. Wright considers this as yielding one kind of true gamboge.

The properties of gamboge are acrid and cathartic.

MAMMEA. (De Cand. 561.)

MAMMEA AMERICANA. *Abricot sauvage.* West Indies.

Fruit eaten, skin and seeds very bitter and resinous; bark abounds in a strong resinous gum, used by the negroes for extracting chigoes from their feet; melted down with a little lime juice, and dropped into sores, it is effectual in destroying maggots at the first dressing; a bath of the bark hardens the soles of the feet like Mangrove bark. (L.)

ORDER 33. HIPPOCRATEACEÆ. (De Cand. i. 567.)

Sepals five, rarely 4—6, very small, combined as far as the middle, persistent; *petals* five, rarely 4—6, equal, hypogynous, somewhat imbricated in æstivation; *stamens* three, very seldom 4—5; *filaments* cohering almost to the apex into a tube, dilated at the base, forming round the ovary a disk-like cup; *anthers* one-celled, dehiscing transversely at the apex, two, or even four-celled; *ovary* concealed by the tube, three-cornered, free; *style* one; *stigmas* 1—3; *fruit* either composed of three samaroid carpels, or berried, with from one to three cells; *seeds* four in each cell, attached to the axis in pairs, some occasionally abortive, erect, exalbuminous; *embryo* straight; *radicle* tending towards the base; *cotyledons* flat, elliptical, oblong, somewhat fleshy, cohering when dried. Arborescent, or climbing shrubs, with opposite, simple, entire or toothed *leaves* and a racemose inflorescence.

HIPPOCRATEA. (De Cand. i. 567.)

HIPPOCRATEA COMOSA. *H. multiflora.* Hispaniola.
Nuts white, sweetish.

ORDER 34.—MALPIGHIACEÆ. (De Cand. i. 577.)

Calyx five, often persistent; *petals* five, unguiculate, inserted in a hypogynous disk, sometimes rather unequal, rarely wanting; *stamens* ten, alternating with the petals, very seldom fewer, sometimes solitary; *filaments* either distinct, or cohering for a short space at the base; *anthers* roundish; *ovary* one, usually three-lobed, formed of three carpels more or less combined; *styles* three, distinct, or combined; *ovules* suspended; *fruit* dry or berried, three-celled or three-lobed, occasionally by absorption 1—2 celled; *seeds* solitary, pendulous, exalbuminous; *embryo* more or less curved or straight; *radicle* short; *lobes* leafy or thickish. Small trees or shrubs sometimes climbing, with opposite, rarely alternate *leaves,* generally with stipules and a racemose or corymbose inflorescence.

BYRSONIMA. (De Cand. i. 579.)

BYRSONIMA CRASSIFOLIA. *Malpighia crassifolia, M. moureila.* Guaiana.

Bark employed as a febrifuge; under the name of *Chapara mantica,* it is used in infusion as an antidote to the bite of the rattlesnake; it is also said to be employed successfully as a remedy for abscesses in the lungs. (L.)

MALPIGHIA. (De Cand. i. 577.)

MALPIGHIA GLABRA. *Cerasus Jamaicenses, Barbadoes cherry.* Warm parts of America.

Fruit subacid, carminative, stomachic.

TRIOPTERIS. (De Cand. i. 586.)

TRIOPTERIS JAMAICENSIS. *Switch sorrel.* Jamaica.
Acerb, bitterish.

ORDER 35.—ACERINEÆ. (De Cand. i. 593.)

Calyx 4—5—9 partite; *petals* 4—9, inserted around the hypogynous disk, alternate with, and generally of the same colour as, the calyx lobes, rarely wanting; *stamens* inserted into the hypogynous disk, generally eight, rarely 5—12; *anthers* oblong; *ovary* didymous; *style* one; *stigmas* two; *fruit* consisting of two indehiscent carpels, which separate when ripe, forming a samara, *i.e.* a one-celled 1—2 seeded carpel, compressed at the upper part, and terminating in a diverging membranous wing, thickened at the lower part; *seeds* oblong, attached to the base of the cell; *endopleura* subcarnose; *albumen* none; *embryo* curved or convolute; *cotyledons* foliaceous; *radicle* directed towards the base of the cell. *Trees* with opposite simple *leaves.*

ACER. (De Cand. i. 593.)

*ACER CAMPESTRE. (E. B. 304.) *Acer minus, Common maple.*
Fl. pale green. June. Large tree. Hedges, &c.
Root useful in liver complaints.

ACER PLATANOIDES. *Norway maple.* Europe.

*Acer pseudo platanus. (E. B. 303.) *Acer majus, Greater maple, Sycamore.*

Fl. yellowish green. June. Large tree. Hedges, &c.

Acer saccharinum. *Sugar maple.* Canada.

The sap of these trees, as well as that of the common maple, is used for making sugar and wine.

Acer rubrum, *Virginia maple.* North America.

Decoction of the inner bark used as an astringent eye-water.

Order 36.—HIPPOCASTANEÆ. (De Cand. i. 597.)

Calyx campanulate, five-lobed; *petals* five, or four by abortion, hypogynous, unequal; *stamens* 7—8, inserted on a hypogynous disk, unequal, free; *ovary* roundish, three-cornered; *style* one, filiform, conical; *fruit* coriaceous, 2—3 valved, 2—3 celled; *seeds* large, roundish, with a smooth shining coat, and a broad ash-coloured hilum; *albumen* none: *embryo* curved, inverted, with thick fleshy cotyledons and a very large plumula. *Trees* or *shrubs* with compound, opposite, exstipulate *leaves*: *flowers* in terminal racemes.

Æsculus. (De Cand. i. 597.)

**Æsculus hippocastanum. *Horse chestnut.*

Fl. white, spotted with red and yellow. May. Large tree. India.

Bark recommended as a valuable febrifuge in intermittent and other fevers, (as well as the skin of the fruit,) astringent, used for Peruvian bark in doses of ʒss. to ʒj.; it deserves to be the subject of a series of well conducted experiments; a decoction has been recommended in gangrene, and its powder is errhine; seeds farinaceous, but must be soaked in an alkaline ley to take off their bitterness.

Pavia. (De Cand. i. 598.)

Pavia rubra. *Æsculus pavia, Scarlet-flowered horse chestnut.*

Bark febrifuge: root used for soap; seeds, *buck eyes*, used to poison fish.

Order 37.—RHIZOBOLEÆ. (De Cand. i. 599.)

Sepals five, more or less combined, imbricated in æstivation: *petals* five, thickish, unequal, arising along with the stamens from a hypogynous disk; *stamens* extremely numerous, slightly monadelphous, arising in a double row from a disk, the innermost being shorter and often abortive; *anthers* roundish; *ovary* superior, 4 – 6 celled, 4—6 seeded; *styles* 4—6; *stigma* simple; *ovules* peltate; *fruit* consisting of 4—6 nuts combined together, part of which are sometimes abortive, each nut indehiscent, one-seeded, one-celled, with a thick double putamen; *seed* reniform, exalbuminous, with a funicle which is dilated into a spongy excrescence; *radicle* very large, constituting nearly the whole of the almond-like substance of the nut, with a long two-edged caulicle, having two small cotyledons, and lying in a furrow of the radicle. *Trees* with opposite-stalked compound exstipulate *leaves* and racemose *flowers*.

CARYOCAR. (De Cand. i. 599.)

CARYOCAR BUTYROSUM. *Pekea butyracea, Rhizobolus butyrosus, Surawah nut.* Guiana.

Seed esculent.

CARYOCAR TOMENTOSUM. *Pekea tuberculosa, Rhizobolus pekea, R. tuberculosa, Guiana almonds, Brazil nuts.* Guiana, &c.

Seeds esculent, imported from the Brazils.

ORDER 38.—SAPINDACEÆ. (De Cand. i. 601.)

Flowers polygamous. *Males : calyx* more or less deeply 4—5 parted, or 4—5 leaved, with an imbricated æstivation; *petals* 4—5, or occasionally absent, alternate with the sepals, hypogynous, sometimes naked, sometimes with a doubled appendage on the inside, æstivation imbricated; *disk* fleshy, sometimes occupying the base of the calyx, regular, nearly entire, expanded between the petals and stamens, sometimes glandular, incomplete, the glands stationed between the petals and the stamens; *stamens* 8—10, rarely 5—6—7, very seldom 20, sometimes inserted into the disk, sometimes into the receptacle between the glands and the pistil; *filaments* free, or combined just at the base; *anthers* turned inwards, dehiscing longitudinally; rudiment of a *pistil* very small or none. *Hermaphrodite flowers : calyx, petals, disk, stamens,* as in the males; *ovary* three-celled, rarely 2—4 celled, the cells containing 1—2—3, very seldom more ovules; *style* undivided, or more or less deeply two or three cleft; *ovules,* when solitary, erect or ascending, rarely suspended; when double the upper ascending, the lower suspended; *fruit* sometimes capsular, 2—3 valved, sometimes samaroid, sometimes fleshy and indehiscent; *seeds* usually with an aril, the outer integument crustaceous or membranous, the interior pellucid; *albumen* none; *embryo* seldom straight, usually curved, or spirally twisted; *radicle* next the hilum; *cotyledons* incumbent, sometimes combined into a thick mass: *plumule* two-leaved. *Trees* or *shrubs* which often climb, and have tendrils, seldom climbing *herbs : leaves* alternate, compound, very rarely simple, with or without stipules, often marked with lines or pellucid dots; *flowers* in racemes, or racemose panicles, small, white or pink, seldom yellow.

CARDIOSPERMUM. (De Cand. i. 601.)

CARDIOSPERMUM HALICACABUM East Indies.

Root aperient; juice used as an emollient in gonorrhœa; herb used as food.

EUPHORIA. (De Cand. i. 611.)

EUPHORIA LITCHI. *E. punicea, Dimocarpus, Sapindus edulis, Lit-schi.* India and China.

Fruit esculent.

MAGONIA. (L.)

MAGONIA PUBESCENS. *Phæocarpus campestris.* Brazil.

Ashes extremely alkaline; bark used for subduing the swellings produced in the hides of horses by the stings of insects; leaves lethal to fish. (L.)

MELICOCCA. (De Cand. i. 614.)

MELICOCCA BIJUGA. *Genip tree.* West Indies.

Seeds oily, esculent.

MELICOCCA TRIJUGA. *Schleichera trijuga.* India.

Bark astringent, rubbed up with oil the natives of India use it to cure the itch. The pulpy subacid aril is edible and palatable. (L.)

Paullinia. (De Cand. i. 604.)

Paullinia australis. (L.) Brazil.

Supposed to be the plant from which a species of *Polistes* prepares a venomous honey in the woods of Brazil, (*Auguste de St. Hilaire.*) (L.)

Paullinia subrotunda. Woods in Peru.

Arillus esculent.

Sapindus. (De Cand. i. 607.)

Sapindus emarginatus. (Vahl.) India.

Employed by the Hindoo physicians as an expectorant, (Ainslie). When mixed with water froths like soap, and is used instead of that substance for many important purposes; Dr. Sherwood states that the seeds pounded with water often put an end to the epileptic paroxysm, a small quantity being introduced into the patient's mouth. (O'Sh.)

Sapindus saponaria. *Saponaria, Soap berry tree.* West Indies.

Fruit used with rum as an embrocation in rheumatism; tops, leaves, and seed vessels, form a lather with water, and cleanse linen, &c.; the plant intoxicates and kills fish. (G.) Fruit detersive and very acrid, they lather freely in water, and are used in the West Indies instead of soap; "a few of them will cleanse more linen than sixty times their weight of soap;" pounded and thrown into water they intoxicate fish; a tincture of the berries has been recommended in chlorosis; *S. inæqualis* is said to have similar detersive qualities. (L.)

Schmidelia. (De Cand. i. 610.)

Schmidelia serrata. *Ornitrophe serrata.* Bengal.

Root astringent, employed by the Telinga physicians in substance to stop diarrhœa; ripe berries eaten by the natives of Coromandel. (L.)

Serjania. (De Cand. i. 602.)

Serjania triternata. *Liane a persil.* Warm parts of America.

Used to poison fish.

Order 39.—MELIACEÆ. (De Cand. i. 619.)

Sepals 4—5, more or less united; *petals* as many as the sepals, alternating with them, hypogynous, usually conniving at the base or even cohering; *stamens* twice as many as the petals; *filaments* cohering in a long tube; *ovary* solitary; *style* one; *stigmas* distinct or combined; *fruit* berried, drupaceous, or capsular, many-celled, often by abortion one-celled; *seeds* albuminous, or sometimes without albumen. *Trees* or *shrubs* with alternate exstipulate *leaves.*

CARAPA. (De Cand. i. 626.)

CARAPA OBOVATA. (L.) *Xylocarpus obovatus.*

CARAPA MOLUCCENSIS. *Xylocarpus granatum.* Various parts of the East Indies.

Contain an extremely bitter principle. (L.)

CEDRELA. (De Cand. i. 624.)

CEDRELA ODORATA. *C. rosmarinus?* *Barbadoes cedar.*

Wood slightly odoriferous, anti-rheumatic; yields a resin. (L.)

CEDRELA TOONA. *C. febrifuga.* *Poma.* *Toona.* Bengal, Java.

Bark used as a febrifuge. (G.) It has been employed in Java with much success in the worst epidemic fevers, diarrhœa, and other complaints: and also in various cases of dysentery, but in the last stage only, when the inflammatory symptoms had disappeared; it has also been considered especially useful in bilious fevers and inveterate diarrhœa arising from atony of the muscular fibre. (L.)

GUAREA. (De Cand. i. 623.)

GUAREA AUBLETII. *Trichilia guarea.*

Bark a violent emetic and purgative; a decoction is said to produce similar effects, but in a milder manner; possibly the same as the next species. (L.)

GUAREA TRICHILIOIDES. *Melia guarea.* Cuba.

Juice of bark purgative and violently emetic. (L.)

HUMIRIA. (De Cand. i. 619.)

HUMIRIA BALSAMIFERA. *Myrodendron amplexicaule*, *Houmiri*, or *Touri.* Guiana.

Yields *balsam houmiri;* bark resinous. (G.) The balsam is very similar to that produced by

HUMIRIA FLORIBUNDUM. (L.) Brazil.

This plant, the *Umiri* of the people of Para, yields from its trunk, when wounded, a valuable, fragrant, limpid, pale yellow balsam, called *Balsam of umiri*, possessing the same medicinal qualities as balsam of copaiva; compared by Martius to that of Peru. (L.)

MELIA. (De Cand. i. 621.)

MELIA AZEDARACH. *Azedarach*, *Bread-tree.* Syria and South of Europe.

Seeds yield oil; bark, *azedarachta P. U. S.*, used for the Peruvian; leaves vulnerary, vermifuge, diuretic; root bitter and nauseous, used in North America as an anthelmintic; the pulp that surrounds the seeds said to be poisonous, but this is denied by Turpin; trees yield gum, and also toddy.

SANDORICUM. (De Cand. i. 621.)

SANDORICUM INDICUM. East Indies.

Root aromatic, stomachic, and antispasmodic; it is employed in Java against leucorrhœa, combined with the bark of the root of *Carapa obovata*, which is extremely bitter. (L.)

SWIETENIA. (De Cand. i. 625.)

SWIETENIA FEBRIFUGA. *Soymida febrifuga.* (L.) *Red wood tree.* India.

Bark an efficient remedy for the dangerous jungle fever of India when cinchona produces no effect; it has also been employed successfully in India in bad cases of gangrene, and in Great Britain in typhus fever, and as an astringent. (L.) Dose in powder ʒss. (G.)

SWIETENIA CHICKRASSA. *Chickrassia tubularis.* (L.) East of Bengal.

Bark powerfully astringent, without bitterness. (L.)

SWIETENIA MAHOGONI. *Mahogany-tree.* Hotter parts of America.

Wood astringent; an extract is made from it. (G.) Has been used in the West Indies as a substitute for Peruvian bark, but inferior to it. (L.)

SWIETENIA SENEGALENSIS. *Khaya senegalensis.* (L.) Borders of the Gambia.

Bark very bitter, called *Cail cedra*, febrifuge; the blacks use it in infusion and decoction, never in powder; it is employed as a remedy for the fevers so common in the damp districts of the Gambia.

The *Juribali*, or *Euribali*, is a plant possibly allied to this genus; the bark is a potent bitter and astringent; it appears to be far superior to Peruvian bark in fevers of a typhoid or malignant nature; it is cordial and purgative, and is also a powerful diaphoretic, especially if taken warm. (Dr. Hancock.) It is not known to what genus this belongs. (L.)

TRICHILIA. (De Cand. i. 622.)

TRICHILIA EMETICA. Yemen, Senegal.

Fruit used by the Arabs as an emetic under the name of *Djouz elkai;* ripe seeds formed with sesamum oil into a salve against the itch. (L.)

TRICHILIA SPONDOIDES. *Bastard brazil.* Jamaica and Hispaniola.

Wood used in dyeing.

TRICHILIA SPINOSA. East Indies.

Berries boiled for their oil.

TRICHILIA TRIFOLIATA. Curaçoa.

The female slaves in Curaçoa use a decoction of the roots to produce abortion; the Dutch call the tree *Kerseboom*, the Spaniards *Ceraso macho.* (L.)

WALSURA. (O'Sh.)

WALSURA PISCIDIA. East Indies.

Bark employed to intoxicate fish, which are not deemed unwholesome in consequence. (O'Sh.)

ORDER 40.—AMPELIDEÆ. (De Cand. i. 627.)

Calyx small, entire or toothed at the margin; *petals* 4—5, alternate with the teeth of the calyx, inserted on a disk which surrounds the ovary; *stamens* as many as the petals, inserted upon the disk; *anthers* ovate, versatile; *ovary* free, globose; *style* very short or none; *stigma* simple; *berry* often pulpy, one-celled; *seeds* 4—5 or fewer by abortion, erect, osseous! *albumen* fleshy, hard; *embryo* erect! *cotyledons* lanceolate. Climbing *shrubs* with tumid separable joints, the lower *leaves* opposite the upper, alternate, and small greenish *flowers*.

CISSUS. (De Cand. i. 627.)

CISSUS ACIDA. South America.

CISSUS SETOSA. Bengal.

Every part of these plants exceedingly acrid; the leaves toasted and oiled are applied to indolent tumours to bring them to suppuration. (L.)

CISSUS SALUTARIS. South America.

Has a root useful in dropsical cases. (L.)

VITIS. (De Cand. i. 633.)

**VITIS VINIFERA. *Grape vine.*

June. Native of Asia.

Numerous varieties of this plant are cultivated; fruit, *grapes, uvæ,* esculent when ripe, cooling and antiseptic; in large quantities diuretic and laxative, very useful in bilious and putrid fevers, dysentery, and all inflammatory affections; raisins more laxative than the fresh fruit; juice made into a variety of wines, also inspissated, and made into sugar. *Dried grapes, Uvæ siccatæ, Raisins,* from Barbary in jars. *Raisins of the sun, Uvæ passæ majores;* these and the other raisins are prepared by being left to wither a little on the vine, the stalk being cut half-way through, then gathered and dipped in a ley of wood-ash and barilla, at 12 or 15 deg. Baume, spec. g. 1·094 to 1·116, to every four gallons of which are added a handful of salt and a pint of oil, or a pound and a half of butter, and then drying them in the sun; they lose about two-thirds of their weight, and become covered with a saccharine exudation; *Denia raisins, Malaga raisins, Valencia raisins, Belvidere raisins, Lexia raisins, Muscatel raisins, Bloom raisins, Sultana raisins, Uvæ apyrenæ* (small, yellowish red, without stones,) *Black Smyrna raisins, Red Smyrna raisins, Currants, Uvæ minores Corinthiacæ, East Indian raisins,* (Kishmish, from the small Schiraz grapes.) All these dried grapes are used for food, or fermented with water and made into wine. *Rape,* *Vinacea,* the cake left on pressing grapes: it is fermented with water, and distilled for brandy.

ORDER 41.—GERANIACEÆ. (De Cand. i. 637.)

Sepals five, persistent, ribbed, more or less unequal, with an imbricated æstivation, one sometimes saccate, or spurred at the base; *petals* five, alternating with the sepals, unguiculate, equal or unequal, either hypogynous or perigynous; *stamens* usually monadelphous, hypogynous, double the number of the petals, some occasionally sterile, equal or unequal; *ovary* in appearance, five-celled, terminating in a long thick style, crowned by five stigmas, but in reality the torus is elongated over the slender, subpentagonal axis: *carpels* five, submembranous, indehiscent, one-celled, two-seeded, addressed to the base of the torus, having at their apex five filiform styles, which are closely adnate to the furrows in the torus, and terminate at the apex in five short, simple, acute stigmas; after fecundation, the styles twist up in various modes from base to apex, and thus draw the carpels out from the calyx, and in a short time both fall off from the torus; *seed* in the carpels solitary, pendulous, exalbuminous; *embryo* curved; *radicle* deflexed and turned towards the base of the carpel; *cotyledons* foliaceous, convolute, and plaited. *Herbaceous plants* or *shrubs,* with tumid stems separable at the joints, and either opposite or alternate *leaves,* with pedunculate *inflorescence.*

Slightly acrid or acid, vulnerary and astringent.

ERODIUM. (De Cand. i. 644.)

*ERODIUM CICUTARIUM. (E. B. 1768.) *Hemlock stork's-bill.*

Fl. pale red. May, September. Annual. Waste ground.

*ERODIUM MOSCHATUM. (E. B. 902.) *Musky stork's-bill.*

Fl. rose-coloured. June, July. Annual. Mountainous pastures.

Astringent and detersive, used in poultices.

GERANIUM. (De Cand. i. 639.)

*GERANIUM COLUMBINUM. (E. B. 157.) *Long-stalked Crane's-bill, Dove's-foot.*

Fl. bluish, or rose-coloured. June, July. Annual. Dry pastures.

*GERANIUM ROBERTIANUM. (E. B. 1486.) *Gratia Dei, Herb Robert.*

Fl. deep crimson, sometimes white. May, August. Annual. Common.

*GERANIUM ROTUNDIFOLIUM. (E. B. 157.) *Round-leaved crane's-bill.*

Fl. reddish purple. June, July. Annual. Pastures and waste grounds.

*GERANIUM SANGUINEUM. (E. B. 272.) *Bloody crane's-bill.*

Fl. reddish purple. July. Perennial. Alpine or limestone pastures.

GERANIUM SYLVATICUM. (E. B. 121.) *G. batrachyoides, Blue dove's-foot, Wood crane's-bill.*

Fl. purplish blue, with crimson veins. July. Perennial. Woods.

Astringent and detersive; used in poultices. (G.) Robertianum is a popular remedy in Wales in nephritic complaints. (L.)

Geranium maculatum. *American crane's-bill.* Canada and Carolina.

Root, *Geranium P. U. S.*, boiled in milk, used in the cholera of infants. (G.) A most powerful astringent, containing considerably more tannin than kino; according to Bigelow, it is particularly suited to the treatment of such diseases as continue from debility after the removal of the exciting cause; the tincture an excellent local application in sore throat and ulcerations of the mouth; used in powder, extract, or tincture. (L.)

Geranium tuberosum. *Bulbous-rooted crane's-bill.* South of Europe.

Root in wine used as a wash in inflammation of the vulva.

Order 42.—TROPÆOLEÆ. (De Cand. i. 683.)

Calyx five-partite, coloured, upper segment spurred at the base, spur free; *petals* five, unequal, irregular, inverted on the calyx, two upper sessile and remote, inserted on the fauces of the spur, three lower stalked, smaller, sometimes abortive; *stamens* eight, perigynous, distinct; *anthers* innate, erect, two-celled; *ovary* three-cornered, made up of three carpels; *styles* three, united into one; *stigmas* three; *carpels* three; one-celled, one-seeded; *seeds* large, exalbuminous; *embryo* large; *cotyledons* straight, distinct when young, afterwards closely coherent; *radicle* hidden between the processes of the cotyledons. Smooth *herbaceous* plants, with alternate peltinerve *leaves* and axillary one-flowered peduncles.

Tropæoleum. (De Cand. i. 683.)

**Tropæoleum majus. *Garden nasturtium, Indian cress.*

Fl. deep orange. July, August. Annual. Native of Peru.

Tropæoleum minus. *Smaller nasturtium.* Peru.

Eaten in sallads, antiscorbutic, excite the appetite, assist digestion, externally used in stubborn itch.

Tropæoleum tuberosum. Peru.

Root eaten.

Order 43.—BALSAMINEÆ. (De Cand. i. 685.)

Calyx two-sepaled; *sepals* small, deciduous, opposite, often mucronate, with an imbricated æstivation; *petals* four, hypogynous, cruciate, two outer ones alternate with the sepals, and callous at the apex, upper one arched, emarginate, lower entire, prolonged at the base into a spur, two inner ones alternate with the former, equal, often bifid or appendiculated; *stamens* five, hypogynous; *filaments* short, thickened at apex; *anthers* subconnate, the three lower stamens opposite the petals, with bilocular anthers, the two upper opposite the upper petal, with one or two-celled anthers; *anthers* dehiscing by a longitudinal chink; *ovary* one; *style* none; *stigmas* five, or united into a single sessile short stigma; *capsule* of five valves, dehiscing elastically; *placenta* central, five angular, the membranous angles extending into the valvular suture, and therefore the young capsule is five celled; *seeds* pendulous, numerous, exalbuminous; *embryo* straight; *radicle* superior

Succulent *herbaceous plants*, with simple, opposite, or alternate *leaves*, without stipules, with an axillary pedunculated *inflorescence*.

IMPATIENS. (De Cand. 687.)

*IMPATIENS NOLI TANGERE. (E. B. 937.) *Touch-me-not. Yellow Balsam.*

Fl. yellow, spotted with red. July, August. Annual. Rare. Near Guildford, Surrey; Yorkshire.

Herb diuretic, capable of producing a diabetes, but extremely uncertain in its operation. (G.)

LIQUIDAMBAR. (Lindl. Fl. Med. 321.)

LIQUIDAMBAR ALTINGIA. *Altingia excelsa, Ras-sa-ma-la.* Java.

Bark with a hot and bitterish taste, yielding, when wounded, a fragrant honey-like balsam; the latter is *liquid storax*, a stimulating expectorant substance, acting in the same way as solid storax, that is to say, influencing the mucous membranes, especially that which lines the air passages. But although this tree undoubtedly produces the fine liquid storax, or *Rasamala* of the Malayan Archipelago, it is probable that the principal part of that in use is obtained from *L. orientale*, for it has been ascertained by Dr. Pereira that all the storax imported for seven years came from Trieste. (L.)

LIQUIDAMBAR ORIENTALE, *L. imberbe, Platanus orientalis.* Cyprus and East of Europe.

Produces by incision excellent white turpentine. The common Cypriots toast and suck morsels of the wood and bark, esteeming them a specific remedy for fevers. (L.)

ORDER 44.—OXALIDEÆ. (De Cand. i. 683.)

Calyx of five, persistent, equal sepals, or five parted; *petals* five, hypogynous, equal, unguiculate; *stamens* ten, the five opposite the petals longest; *filaments* subulate, generally monadelphous; *anthers* two-celled; *ovary* free, with five angles and five cells; *styles* five, filiform; *stigmas* capitate or somewhat bifid; *capsule* ovate or oblong, membranous, with five cells, and from five to ten valves; *seeds* few, fixed to the central angle of the cells, ovate, striated, enclosed in a fleshy arillus, which opens with elasticity; *embryo* inverted; *cotyledons* foliaceous. *Herbaceous* plants or under *shrubs*, with alternate, rarely opposite *leaves*.

AVERRHOA. (De Cand. i. 689.)

AVERRHOA BILIMBI. Bengal.

A syrup is prepared with the juice, and a conserve with the flowers, employed in India in the treatment of fevers. (O'Sh.)

AVERRHOA CARAMBOLA. *Kamarunga.* Bengal.

Fruit used in pickle, in curries, and as an ingredient in several native electuaries. The dyers also employ it very extensively. (O'Sh.) The fruits of both of these are acid, and are made into preserves with sugar. (G.)

OXALIS. (De Cand. i. 690.)

*OXALIS ACETOSELLA. (E. B. 762.) *Acetosella, Alleluja, Lujula. Trifolium acidum, Common wood sorrel, Green sauce.*

Fl. white. May, June. Perennial. Woods. Common.

Herb in salads very refreshing, acidulous, anti-putrescent, makes a very pleasant whey; used for the extraction of salt of sorrel. (G.) Taken as a salad, it forms a good scorbutic; infused in milk or water, it forms a grateful drink in fevers and inflammatory cases. (L.)

*OXALIS CORNICULATA. (E. B. 1726.) *Yellow procumbent Wood sorrel.*

Fl. yellow. May, June. Annual. Shady waste ground, Devon.

Qualities the same as those of O. acetosella.

OXALIS COMPRESSA. Cape of Good Hope.

OXALIS FRUTESCENS.

OXALIS DODECANDRIA.

OXALIS STRICTA. *Jamaica wood sorrel.*

Acid, cooling.

OXALIS TUBEROSA. Chili.

Root like potatoes, herb acid.

ORDER 45.—ZYGOPHYLLEÆ. (De Cand. i. 703.)

Calyx of five sepals, distinct, or very slightly connected at the base; *petals* five, alternating with the sepals, inserted on the receptacle; *stamens* ten, distinct, hypogynous, five opposite the petals, five alternating with the petals; *ovary* simple, five-celled; *styles* five, coalescing in one; *fruit* capsular, with four or five angles or wings, and four or five cells; *seeds* usually numerous, sometimes exalbuminous; *embryo* straight; *radicle* superior, *cotyledons* leafy. *Herbaceous* plants, *shrubs*, or *trees*, with opposite, stipulate, generally pinnate *leaves*; with white, blue, red, or yellow *flowers*, either solitary, or in pairs or threes.

GUAIACUM. (De Cand. i. 707.)

GUAIACUM OFFICINALE. *G. sanctum, Lignum sanctum, Guaiacum, Lignum vitæ tree.* India.

Wood, *guaiaci lignum*, resinous, hot, aromatic, diaphoretic, diuretic, used in dropsy, gout, and especially in the venereal disease; in warm climates yields gum guaiacum; leaves detergent, used in scouring floors, and washing printed linens; the wood is excessively hard and compact. (G.) Internally taken, either wood or resin excites a sensation of warmth in the stomach, and dryness of the mouth and throat. It increases the heat of the skin, accelerates the pulse, and proves diaphoretic if the patient be kept warm, or diuretic if the surface of the body be exposed to the air. In large doses it acts as a purgative. It is also given in cases of foul ulcers, hospital gangrene, thickened ligaments, mercurial ulcerations, and in various forms of scrofula. (O'Sh.) Continued use of the wood occasions heartburn, flatulence, and costiveness. (Pereira.)

Porleira. (De Cand. i. 707.)

Porliera hygrometrica. Chili, Peru.

Wood sudorific, anti-rheumatic. Properties similar to those of Guaiacum. (L.)

Tribulus. (De Cand. i. 703.)

Tribulus terrestris. *Caltrops.* South of Europe, Barbary.

Herb detersive, astringent, vermifuge; seeds cordial.

Zygophyllum. (De Cand. i. 705.)

Zygophyllum fabago. *Bean caper.* Syria.

Vermifuge.

Order 46.—RUTACEÆ. (De Cand. i. 709.)

Calyx 3—5 sepaled, the sepals more or less united together, thus making the calyx either dentate, cleft, or partite; *petals* (very rarely none) generally as many as the sepals, often unguiculate, distinct; *disk* fleshy, glandular, surrounding the ovary, arising from the receptacle, external to the petals, bearing the stamens on the upper part; *stamens* usually double the number of petals; *carpels* as many as the sepals, (sometimes by abortion fewer,) either distinct, or united at the base, or perfectly connate; *style* arising from the centre of the ovary, single, divided into as many stigmas as there are ovaries; *carpels* when ripe generally distinct, one-celled, dehiscent; *seeds* inverted, affixed to the inner angle; *embryo* straight, compressed; *radicle* superior. *Herbs* or *shrubs*, with opposite or alternate stipulate *leaves*, and axillary or terminal *flowers*. All the parts are aromatic.

Dictamnus. (De Cand. i. 712.)

**Dictamnus fraxinella. *Dictamnus albus.* (Var.) *Bastard dittany. Fraxinella.*

Fl. purple or white. June, July. Perennial. South of Europe.

Root rather bitter, cordial, cephalic, alexiterial, uterine, anti-epileptic, vermifuge; in powder ℈j. twice a day.

Diosma. (De Cand. i. 714.)

Diosma crenata. *Barosma crenata, Bucku.* Cape of Good Hope.

Powder of the leaves strong smelling, tonic, astringent, and diuretic; in gleet and other diseases of the urinary passages.

Diosma odorata. D. crenulata, D. serratifolia. Cape of Good Hope.

Plants whose leaves are collected in South Africa under the name of Bucku; the infusion is much praised as a remedy in chronic inflammations of the bladder and urethra, and in chronic rheumatism.

Elaphrium. (De Cand. i. 723.)

Elaphrium tormentosum. Curaçoa and neighbouring islands.

The tree abounds in a fragrant, balsamic, glutinous resin, which is believed to furnish one of the sorts of *Tacamahaca.* (L.)

EVODIA. (De Cand. i. 724.)

EVODIA AROMATICA. *Agathophyllum aromaticum, E. ravensara, Ravensara aromatica, Ravensara.*

Bark aromatic, red; nut resembles both cloves and pimento; kernel extremely hot, biting, with a strong spicy smell; leaves an excellent tonic cordial spice, form an agreeable cordial, yield an oil. Brazil.

EVODIA FEBRIFUGA.

Bark and young wood extremely bitter and astringent; used with great success in Brazil as febrifuges. (L.)

GALIPEA. (De Cand. i. 731.)

GALIPEA CUSPARIA. *Cusparia febrifuga, Bonplandia trifoliata.* Tropical America.

Bark, *Angostura bark, Cuspariæ cortex,* in pieces of different lengths, aromatic, intensely bitter, tonic, stimulant, very useful in dyspepsia, diarrhœa, and dysentery; dose, gr. v. to xx. Imported from Cadiz and West Indies in casks. (G.) Said by Humboldt to produce Angostura bark, but denied by Dr. Hancock, who assigns it to G. officinalis.

GALIPEA OFFICINALIS. (Lindl. p. 211.) South America.

Oraguri of the natives. According to Dr. Hancock, this, which he found to yield the true *Angostura* or *Carony bark,* is essentially different from the Cusparia febrifuga of Humboldt. He considers it one of the most valuable febrifuges we possess, being adapted to the worst and most malignant bilious fevers, while those in which cinchona is administered are simple intermittents. The natives use the bruised bark as a means of intoxicating fishes.

Malambo bark, an aromatic bark with very active, bitter, astringent, febrifugal properties, a native of Columbia, the tree of which is unknown, is supposed by Bonpland to be furnished by some plant allied to Galipea.

PEGANUM. (De Cand. i. 712.)

PEGANUM HARMALA. *Ruta sylvestris, Harmel wild rue.* East of Europe.

Seeds very inebriating, soporific, causing a happy forgetfulness and pleasant delirium.

PTELEA. (Lind. Fl. Med. 214.)

PTELEA TRIFOLIATA. *Carolina shrub trefoil.* United States.

Young green shoots anthelmintic; fruit aromatic and bitter, a good substitute for hops.

RUTA. (De Cand. i. 710.)

RUTA ANGUSTIFOLIA. *Narrow-leaved rue.* South France.

Vermifuge.

**RUTA GRAVEOLENS. *Rata hortensis, Rue.*

Fl. yellow. June, July. Perennial. South of Europe.

Leaves, *Rutæ folia,* powerfully resolvent, emmenagogue, carminative, diuretic; also alexiterial, nervine, cephalic, antispasmodic, and anaphrodisiac; dose gr. xv. to ℈ij.; externally rubefacient.

TICOREA. (De Cand. i. 730.)

TICOREA FEBRIFUGA. Brazil.

Bark intensely bitter, astringent, febrifugal.

TICOREA JASMINIFLORA. Brazil.

A decoction of the leaves taken by the Brazilians as a cure for frambœsia.

ZANTHOXYLUM. (De Cand. i. 725.)

ZANTHOXYLUM ALATUM. (Lind. Med. Bot. 217.) Nepal and north of Bengal.

Aromatic and pungent; seeds used medicinally by the natives.

ZANTHOXYLUM AVICENNÆ. *Fagara avicennæ.* China.

Used in China as an antidote against all poisons, undoubtedly a powerful stimulant.

ZANTHOXYLUM CLAVA HERCULIS. *Tooth-ache tree.* West Indies.

Leaves sudorific, diuretic, sialagogue, when taken internally; used in rheumatism and palsy; expressed juice of the roots, cochl. ij., antispasmodic; roots in infusion used as a collyrium; powder of bark of roots useful in dressing putrid sores; tincture found by Dr. Gillespie to be a good febrifuge; according to others, the decoction is antisiphilitic.

ZANTHOXYLUM FRAXINEUM. *Z. caribbæum, Prickly ash, Prickly yellow wood.* United States.

Bark, *Zanthoxylon, P. U. S.,* febrifuge, dyes yellow. (G.) Has a good deal of reputation in North America as a remedy in chronic rheumatism, generally given in decoction; has also been used as a topical stimulant, producing a powerful effect when applied to secreting surfaces and to ulcerated parts. (L.)

ZANTHOXYLUM HERMAPHRODITUM. *Fagara guianensis, Cucatin.* Guiana.

Used as spice.

ZANTHOXYLUM OCTANDRA. *Fagara octandra.*

Yields *Tacamahaca* in the shell. (G.)

ZANTHOXYLUM PIPERITUM. *Piper Japonicum, Japan pepper.* Japan.

Bark, leaves, and fruit, powerfully aromatic, used as spice;

the active principle is chiefly in the fresh leaves, the dry bark, and the pericarp; the doctors of the country apply a poultice, made of the bruised leaves and rice flour, to sore throats.

ORDER 47. SIMARUBEÆ. (De Cand. i. 733.)

Flowers hermaphrodite, or occasionally unisexual; *calyx* 4—5 parted, persistent; *petals* 4—5, hypogynous, erect, deciduous; *stamens* equal in number to the petals, or twice as many, inserted on a hypogynous disk, free; *ovary* with as many lobes as there are petals; *style* one, filiform, enlarged at the base; *carpels* as many as the petals, attached to a common axis, capsular, bivalved, opening inwards, one-seeded; *seeds* without albumen, pendulous; *cotyledons* two, thick; *radicle* short, superior. *Trees* or *shrubs*, found principally in the tropical regions of the New World, with very bitter bark, and milky juice, having alternate, pinnate, exstipulate *leaves*, and whitish, green, or purple *flowers*.

NIMA.

NIMA QUASSOIDES. *Simaruba quassoides.* (Don.) Nepal, Himalaya mountains.

Extremely bitter.

QUASSIA. (De Cand. 733.)

QUASSIA AMARA. *Coissi quassia.* South America.

Wood of the root very bitter, febrifuge, stomachic; used in gout, dose gr. x. to ʒj., three or four times a day, or in infusion; bark of the root esteemed in Surinam the most powerful, but not to be had in Europe. (G.)

SIMARUBA. (De Cand. i. 733.)

SIMARUBA EXCELSA. *Picræna excelsa, Quassia excelsa, Quassia polygama, Bitter wood.*

Wood makes a good bitter infusion, ʒii—iv. to 1 lb. of cold water; or the powder, gr. xv. may be taken. (G.) The intensely bitter timber furnishes the Quassia chips of the shops. (L.)

SIMARUBÀ OFFICINALIS. (De Cand. i. 733.) *S. amara. Quassia simarouba, Simaruba, Mountain damson, Stave wood.* Guyana.

Bark, *Simarubæ cortex,* inodorous, bitter, astringent; useful in dysentery, intermittent fever, dyspepsia, the whites; dose ℈j. to ʒss. (G.) Infusion more bitter than the decoction. (L.)

SIMARUBA VERSICOLOR. Brazil.

So intensely bitter that no insects will attack the wood.

ORDER 48. OCHNACEÆ. (De Cand. i. 735.)

Sepals five, persistent, æstivation imbricated; *petals* hypogynous, definite, sometimes twice as many as the sepals, deciduous, spreading, imbricated in æstivation; *stamens* five, opposite the sepals, or ten, or indefinite, arising from a hypogynous disk; *filaments* persistent; *anthers* bilocular, innate, opening by pores; *carpels* equal in number to the petals, lying upon an enlarged tumid fleshy disk (the gynobase), their styles combined in one ovule, erect; *fruit* composed of as many pieces as there were carpels, somewhat drupaceous, one-seeded, articulated with the gynobase, which grows with their growth; *seeds* without albumen; *embryo* straight; *radicle* short; *cotyledons* thick. *Trees* and under *shrubs*, sometimes downy, having a watery juice, with alternate bistipulated *leaves*, and racemose *inflorescence*.

GOMPHIA. (De Cand. i. 736.)

GOMPHIA ANGUSTIFOLIA. Ceylon and continent of India.

Root and leaves bitter; a decoction in milk or water employed in Malabar as a tonic, stomachic, and anti-emetic.

WALKERA. (De Cand. i. 787.)

WALKERA SERRATA. Ceylon and Malabar.

Properties the same as Gomphia angustifolia.

ORDER 49. CORIACEÆ. (De Cand. i. 739.)

Flowers either hermaphrodite, or monœcious, or diœcious; *calyx* campanulate, five-parted, ovate; *petals* five, alternate with the lobes of the calyx, and smaller than they are, fleshy, with an elevated keel in the inside; *stamens* ten, arising from the torus, five between the lobes of the calyx and the angles of the ovary, five between the petals and the furrows of the ovary; *filaments* filiform; *anthers* oblong, two-celled; *ovary* seated on a thickish gynobase, five-celled, five-angled; *style* none; *stigmas* five, long, subulate; *ovules* solitary, pendulous, or ascending; *carpels* five, when ripe close together, but separate, indehiscent, one-seeded, sometimes surrounded with glandular lobes; *seed* pendulous or ascending; *albumen* none; *embryo* straight; *cotyledons* two, fleshy. *Shrubs* with opposite branches, often three on each side, two of them being secondary to an intermediate principal one; *leaves* opposite or alternate, simple, entire; *buds* scaly; *racemes* terminal and axillary.

CORIARIA. (De Cand. i. 739.)

CORIARIA MYRTIFOLIA. *Myrtle-leaved sumach.* Shores of Mediterranean.

Leaves used in tanning and dyeing, the same as sumach; sometimes mixed with senna. (G.) Fruit a dangerous poison, exciting violent fits of tetanus, giving place to apoplectic coma; senna adulterated with the leaves equally dangerous; many fatal cases on record. (L.)

SUB-CLASS 2. CALYCIFLORÆ.

ORDER 50. CELASTRINEÆ. (De Cand. ii. 2.)

Sepals 4—5, coherent at the base, not adherent to the ovary, imbricated in æstivation; *petals* as many as the sepals, and alternate with them, very rarely wanting: *stamens* as many as the sepals, alternate with the petals, and therefore opposite the sepals, ambiguously perigynous in their insertion; *anthers* two-celled; *ovary* free, surrounded by a fleshy disk, 2—3—4 celled, cells one, or many-seeded; *ovules* erect, rarely pendulous; *style* one or none; *stigma* 2—4 cleft; *pericarp* capsular, baccate, drupaceous, or samaroideous, various in form, and often deformed by the abortion of the cells: *seeds* in many, especially in the capsular ones, with an arillus; *albumen* none or fleshy; *embryo* straight in the axis of the seed. *Shrubs* or *trees* often with stipulated alternate or opposite *leaves.*

CELASTRUS. (De Cand. ii. 5.)

CELASTRUS MACROCARPUS. Peru.

Seeds oily.

CELASTRUS PANICULATUS. *C. nutans.* East Indies.

A stimulant and useful medicine according to Dr. Royle. (L.) An empyreumatic black oily fluid is distilled from the seeds, which is administered in doses of a few drops daily in emulsions, with a beneficial effect. (O'Sh.)

EUONYMUS. (De Cand. ii. 3.)

EUONYMUS EUROPÆUS. (E. B. 362.) *Fusian prick-wood, Spindle-tree.*

Fl. greenish-white. May. Large shrub. Hedges.

Seeds three or four, emetic and purgative; externally used as a powder to kill lice, &c.; wood makes good charcoal; fruits dye a yellowish-red, or rusty colour. (G.)

EUONYMUS TINGENS. India.

Used to mark the Tika on the forehead of the Hindoos, and is considered by the natives as useful in diseases of the eyes. (O'Sh.)

ELÆODENDRON. (De Cand. ii. 10.)

ELÆODENDRON ROXBURGHII. *Neerija dichotoma.* India.

The fresh bark of the root, rubbed with plain water, is applied by the natives externally to almost every sort of swelling; it is a very strong astringent, possessing scarcely any other sensible quality. (Roxb.)

ILEX. (De Cand. ii. 13.)

ILEX AQUIFOLIUM. (E. B. 496.) *Common Holly.*

Fl. white. May, June. Large shrub. Hedges and woods.

Root, bark, berries, acrid, purgative; externally used, emollient, and resolvent; berries roasted, used for coffee; bark yields birdlime. (G.) Dr. Rouseau asserts that the leaves are equal to Peruvian bark in the cure of intermittent fever; the root and bark are said to be emollient, expectorant, resolving, and diuretic; Haller recommends the juice of the leaves in icterus; Keil also affirms that he has used the bark successfully in cases of epidemic intermittent fever, when Peruvian bark has failed.

ILEX VOMITORIA. *Cassine peragua, Ilex ligustrina.* Florida and Carolina.

Leaves, *Paraguay tea,* diuretic in infusion, and diminish hunger, but if too much is used, emetic; an infusion of the high dried leaves is drank as an exhilarant. (G.) A strong decoction of this plant, called black drink, is used by the tribe of the Creek Indians at the opening of their councils. (L.)

MAYTENUS. (De Cand. ii. 9.)

MAYTENUS CHILENSIS. *Celastrus maytenus*, *Senacia maytenus.* Chili.

A decoction of the young branches used in Chili as a wash for swellings produced by the poisonous shade of the tree called Lithi. (L.)

MYGINDA. (De Cand. ii. 12.)

MYGINDA URAGOGA. Carthagena.

Root, in infusion or decoction, a most powerful diuretic.

MYGINDA GOUGONBA. *Ilex paraguariensis*, *Maté*, *Yapon*, *Yerba de palos*, *Paraguay tea.*

Said by Von Martius to deserve notice as a diuretic.

PRINOS. (De Cand. ii. 16.)

PRINOS GLABER. *Apalachian tea.* North America.

Leaves used as tea.

PRINOS VERTICILLATUS. *Black alder.* United States.

Bark febrifuge. (G.) Considered as a valuable tonic, especially in cases of great debility, accompanied by fever; as a corroborant in anasarcous and other dropsies, and especially as a tonic in cases of incipient sphacelus or gangrene: berries also reputed tonic, but Bigelow asserts that they are emetic. (L.)

STAPHYLEA. (De Cand. ii. 2.)

STAPHYLEA TRIFOLIA. *Bladder-nut tree.* North America.

Kernels eaten.

ORDER 51. RHAMNEÆ. (De Cand. ii. 19.)

Tube of the *calyx* adhering to the ovary; *lobes* 4—5, valved in æstivation; *petals* equal in number to, and alternate with, the lobes of the calyx; *stamens* as many as the petals opposite to them; *anthers* bilocular; *ovary* superior, or half superior, from two to four-celled, cells with one ovule; *style* single; *stigmata* 2—4; *pericarp* generally indehiscent, a berry or drupe; *seeds* erect, without arillus; *albumen* none, or mostly fleshy; *embryo* straight, with an inferior radicle, and large flat cotyledons. *Shrubs* or small *trees*, with simple, alternate, very rarely opposite *leaves*, often stipulate.

BIRCHEMIA. (De Cand. ii. 22.)

BIRCHEMIA VOLUBILIS. *Ænopilia volubilis*, *Rhamnus volubilis.* Carolina and Virginia.

Roots prescribed in cachectic disorders; said to be antisiphilitic. (O'Sh.)

CEANOTHUS. (De Cand. ii. 31.)

CEANOTHUS AMERICANUS. *New Jersey tea.* United States.

Leaves used for tea. (G.) An infusion of the twigs has been employed on account of its astringency to stop gonorrhœal discharges; root said to be antisiphilitic. (L.)

HOVENIA. (De Cand. ii. 40.)

HOVENIA DULCIS. Japan.

Peduncle fleshy, sweet tasted, esculent.

PALIURUS. (De Cand. ii. 22.)

PALIURUS ACULEATUS. *Rhamnus paliurus.* South Europe.

Seeds diuretic; root and leaves astringent, detersive; fruit incisive.

RHAMNUS. (De Cand. ii. 23.)

**RHAMNUS ALATERNUS. *Evergreen privet.*

Fl. greenish. April, June. Large shrub. South Europe.

Some sap green is made from it; laxative.

*RHAMNUS CATHARTICUS. (E. B. 1629.) *Spina cervina, Buck thorn.*

Fl. yellowish green. June. Large shrub. Hedges.

Berries a powerful hydragogue, purgative; usually made into a syrup; juice made into sap green; bark dyes yellow; inner bark is cathartic. The berries are globular, blueish black, with four cells, and as many seeds, by which last character they may be easily distinguished by druggists from the fruit of R. frangula, which is supposed to be less active.

RHAMNUS FRANGULA. (E. B. 250.) *Alnus nigra, Black alder tree, Berry bearing alder tree.*

Fl. greenish. May. Large shrub. Woods and thickets.

Unripe berries used to make sap green; ripe berries purgative and emetic; bark bitter, emetic, detersive, aperitive, and dyes yellow; bark of root violently purgative; wood, *Black dogwood*, makes the best charcoal for gunpowder.

RHAMNUS INFECTORIUS. South Europe.

Berries purgative; unripe berries dried, *French berries, Grana avenionensia,* dye yellow; *Turkey berries* preferred by the dyers, are a larger variety. They are principally used for dying Maroquin leather yellow.

RHAMNUS AMYGDALINUS, BUXIFOLIUS, OLEOIDES, PUBESCENS, and SAXATILIS, have similar properties.

RHAMNUS LYCIOIDES. *R. niger, Black ram thorn.* Spain.

Fruit in decoction relieves the pain of the gout.

RHAMNUS SANGUINEUS. Spain.

Bark boiled in milk used for the itch.

RHAMNUS THEEZANS. China.

Leaves used to reduce tea.

RHAMNUS SICULUS. *Elæodendron argan.*

Nuts pressed for their oil.

ZIZYPHUS. (De Cand. ii. 19.)

ZIZYPHUS ÆNOPLIA. *Z. napeca, Rhamnus ænoplia, Great jujubes.* India.

Unripe fruit stomachic, astringent; juice of the ripe fruit laxative. (G.) The fruit is eaten by the natives, the taste is a very pleasant acid; a decoction of the fresh bark is said to promote the healing of fresh wounds. (Roxb.)

ZIZYPHUS JUJUBA. *Rhamnus jujuba.* East India and China.

Fruit styptic; bark employed in the Moluccas as a remedy for diarrhœa; the root, with some warm seeds in infusion, in fever. (O'Sh.)

ZIZYPHUS VULGARIS. *Rhamnus zizyphus, Jujube tree.* Syria, Persia, India.

Fruit, *Jujubes, Jujubæ,* nourishing, mawkish, mucilaginous, pectoral. From this and the former species are prepared the pleasant pectoral lozenges called *Pâte de jujubes* when genuine.

ZIZYPHUS LOTUS. *Lotus.* Sicily, Portugal.

Fruit eatable, makes a pleasant wine.

ZIZYPHUS SOPORIFERA.

Fruit anodyne, soporific, used in decoction.

ORDER 52. HOMALINEÆ. (De Cand. ii. 53.)

Calyx funnel-shaped, superior, with from five to fifteen divisions; *petals* alternate with the segments of the calyx, and equal to them in number; *glands* present in front of the segments of the calyx; *stamens* arising from the base of the petals, either singly, or in threes or sixes; *anthers* two-celled, opening longitudinally; *ovary* half inferior, one-celled, with numerous ovules; *styles* from three to five, simple, filiform, or subulate, ovules attached to as many parietal placentæ as there are styles; *fruit* berried or capsular; *seeds* small, ovate or angular, with an embryo in the middle of the fleshy albumen. *Trees* or *shrubs; leaves* alternate with deciduous stipules, toothed or entire; *flowers* in spikes, racemes or panicles.

ARISTOTELIA. (De Cand. ii. 56.)

ARISTOTELIA MACQUI. *A. glandulosa.* Chili.

Fruit eaten with sugar, or rubbed down with water for a drink.

ORDER 53. TEREBINTHACEÆ. (De Cand. ii. 61.)

Calyx of 3—5 sepals, more or less united at the base; *petals* most frequently equal in number to the sepals, and alternate with them, usually distinct, imbricate, or valved in æstivation; *stamens* rising with the petals from the bottom of the calyx, or from the calycine disk, sometimes equal in number to the petals, and alternate with them, sometimes twice as many; *carpels* numerous, sometimes united, sometimes distinct, monostylous, some in either case generally abortive, and thence the carpels in many instances appear solitary and one-celled; *fruit* drupaceous or capsular; *seeds* few, generally solitary, and without albumen; *embryo* straight, arcuate, or replicate; *cotyledons* various; *radicle* often superior. *Trees* or *shrubs* with alternate generally compound *leaves;* resinous, balsamic, or gummy *bark,* and small *flowers* generally panicled.

AMYRIS. (De Cand. ii. 81.)

AMYRIS HEXANDRA. (L.) Nevis.

Mr. William Hamilton, who has given an imperfect account of this tree, says, that this plant produces the fragrant fennel-scented substance called *Gum elemi* on Nevis. There is, however, great doubt respecting the origin of this resin; according to Dr. Pereira, gum elemi is brought into this country in three forms: 1st, Elemi in flag leaves, *Resine elemi en pains*, (Guibourt); *Resina elemi orientalis*, (Martius,) imported from Holland in masses enveloped in palm-leaves, weighing from one to two pounds each; 2nd, Elemi in the lump, differing in nothing but colour, being paler, from 3rd, Brazilian elemi. These varieties appear to be produced by different trees, as Canarum balsamiferum, Icica icicariba, Balsamodendron zeylanicum, &c. According to the Edinburgh College, it is the produce of one or more unascertained plants; the London and Dublin Colleges call it the resin of Amyris elemifera, Lin., under which name he has confounded two distinct plants, viz. Icica icicariba, (De C.), and Amyris plumieri, (De C.); its principal use is as a constituent of the Unguentum elemi.

AMYRIS PLUMIERI. *A. elemifera.*

Yields by incision *Gum elemi;* wood, *Bois de chandelle noir*, split in laths, and burned for lights.

AMYRIS TOXIFERA. *A. balsamifera.* West Indies.

Wood, *Jamaica rosewood*, *Lignum rhodium*, used in cephalic fumigations, burning with a scent of roses; leaves in infusion diaphoretic, aromatic, cephalic; berries used for balsam of copaiba; it also yields a resin, used as a poison in war and hunting, which is perhaps that called *Ticuna.* From undescribed trees of this genus Amyris are produced true or male frankincense, and liquid myrrh.

ANACARDIUM. (De Cand. ii. 62.)

ANACARDIUM OCCIDENTALE. *Cassuvium occidentale*, *Cashew nut tree.* East and West Indies.

Peduncle of the nut astringent, eatable; juice astringent, made into a kind of wine; kernel of the nut aphrodisiac, used to increase the memory, as also to quicken the genius; shell of the nut contains an acrid oil; exudes gum. (G.) The oil is caustic and thick, blistering when applied to the skin, has been used as a caustic for warts, corns, obstinate ulcers, ringworm, &c.; the vapour of the oil when roasting will often produce violent swelling and inflammation; a gum resembling gum arabic, and called *Cashew gum*, exudes from the bark; (Pereira.) This gum, which in its properties almost entirely agrees with gum arabic, but is rather more astringent, is used in Brazil in the same manner as that substance; the bookbinders in the principal towns sometimes wash books with it, which is said to keep off the moths and ants; the fresh acid juice of the flower stalks is used in lemonade; wine and vinegar, too, are made of it by fermentation; the sympathetic effect which the nut borne about the person has upon chronic inflammations in the eyes, especially such as are of a scrofulous nature, is remarkable. (Martius.) (L.) The black balsam of the fruit is used for the same purposes as that of Semecarpus anacardium. (O'Sh.)

BALSAMODENDRON. (De Cand. ii. 76.)

BALSAMODENDRON GILEADENSE. *Amyris gileadensis*, *A. opobalsamum*, *Protium gileadense*, *Balm of Gilead tree.* Arabia.

Yields by incision the true balm of Gilead in very small quantities, generally at the rate of three or four drops a day from a branch; even the most resinous trees not yielding more than sixty, whence arises its value; fruit *carpobalsamum*, and branches *xylobalsamum*, vulnerary, antiseptic, and used against barrenness. (G.) The wounded bark yields *opobalsamum*, according to Forskal; this, which is also called *Balsam of Mecca*, is reckoned by the Orientals a perfect panacea, being, according to them, vulnerary, stomachic, alexipharmic, &c.; according to Prosper Alpinus its different qualities depend upon its preparation. (L.)

BALSAMODENDRON KAFAL. *Amyris kafal*, *Protium kafal.* Arabia.

A very fragrant resin is obtained from the fruit of this tree; the gum is purgative. (L.)

BALSAMODENDRON KATAF. *Amyris kataf*, *Protium kataf*, *B. myrrha.* Arabia.

According to Ehrenberg this is the plant which yields myrrh, which exudes from the bark like gum from the bark of a cherry-tree; it promotes the appetite, creates an agreeable warmth in the stomach, and occasions slight constipation. The Indian Bdellium, a gum-resin resembling myrrh, is supposed to be obtained from some tree of this genus. (L.)

BOSWELLIA. (De Cand. ii. 76.)

BOSWELLIA GLABRA. India.

Exudes *koondricum*, and by incision yields *gugul.*

BOSWELLIA SERRATA. *B. thurifera*, *Libanus thurifera.* India.

Yields a resin called *Olibanum*, chiefly used in the Indian temples as an incense, but also stimulant, astringent, and diaphoretic; prescribed by the native Indian doctors, mixed with clarified butter, in gonorrhœa and bloody flux.

BRUCEA. (De. Cand. ii. 88.)

BRUCEA ANTIDYSENTERICA. *B. ferruginea, Wooginos, False angostura.* Abyssinia.

Inner bark astringent, used to make brucine. (G.) Considered in Abyssinia a most valuable remedy in dysentery and severe cases of diarrhœa, but not known in Europe; it was supposed that a poisonous bark called false angostura was yielded by this plant, but it is now ascertained that it is nothing but the bark of the nux vomica; all the statements, therefore, concerning the danger of brucea bark and brucine, belong to strychnos, and have nothing to do with brucea itself. (L.)

BRUCEA SUMATRANA. (L.) *Gonus amarissimus.* Sumatra.

Properties similar to those of B. antidysenterica; Dr. Horsfield thinks it would be as serviceable a tonic as quassia. (L.)

BURSERA. (De Cand. ii. 78.)

BURSERA ACUMINATA. West Indies.

A yellow concrete essential oil is yielded by this plant. (L.)

BURSERA GUMMIFERA. *Jamaica birch-tree.* West Indies.

Yields *Resina chibon;* bark has the qualities of Simarouba; root astringent.

CANARIUM. (De Cand. ii. 79.)

CANARIUM BALSAMIFERUM.

Yields a kind of incense.

CANARIUM COMMUNE. *Bois de colophane.* Indian Islands.

Nuts, *Java almonds,* eaten and made into bread; kernels yield an oil. (G.) The bark yields an abundance of limpid oil with a pungent turpentine smell, congealing into a buttery camphoraceous substance, having the same properties as balsam of copaiba; raw fruit eatable, but apt to bring on diarrhœa; said to yield East Indian elemi. (L.)

This plant, Balsamodendron zeylanicum, De C., and Colophonia mauritiana, De C., appear to be the same. *Vide* Lindl. Med. Bot., p. 170.

CNEORUM. (De Cand. ii. 83.)

CNEORUM TRICOCCON. *Widow wail.* Spain, France.

Acrid, caustic, drastic; a powerful detersive, but dangerous.

COMMIPHORA? (L. M. B. 173.)

COMMIPHORA MADAGASCARENSIS. *Amyris commiphora.* (Roxb.) Silhet, Assam, Madagascar.

Produces *Indian bdellium,* a substance resembling myrrh, according to Professor Royle; *Guggul* or *Bengal elemi,* according to Guibourt. (L.)

COMOCLADIA. (De Cand. ii. 65.)

COMOCLADIA DENTATA. Cuba, St. Domingo.

Wood, *Bastard Brazil*, dark red, dyes like Brazil wood; juice dyes the skin of a nearly indelible black colour (G.); juice milky, glutinous, becoming black by exposure to the air, staining the linen or the skin of the same colour, only coming off with the skin itself, and not removable from linen by washing, even if repeated for many years successively; it is supposed by the inhabitants of Cuba that it is death to sleep beneath its shade, especially for persons of a sanguine or fat habit of body; this is firmly believed, and there is no doubt that it is the most dangerous plant upon the island. (L.)

COMOCLADIA ILLICIFOLIA. *C. angulosa.* St. Domingo.

Wood, *St. Domingo braziletto*, used in dyeing; juice stains the skin black.

HEUDELOTIA. (L. Med. B. 286.)

HEUDELOTIA AFRICANA. *Niouttout.* Senegal.

Supposed to produce the African bdellium. (L.)

HOLIGARNA. (De Cand. ii. 63.)

HOLIGARNA LONGIFOLIA. East Indies.

Similar in qualities to Stagmaria verniciflua, which see.

ICICA. (De Cand. ii. 77.)

ICICA HETEROPHYLLA. *I. aracouchini.* Guiana.

The wounded branches yield an abundance of a yellowish balsamic aromatic liquid, of a terebinthinous nature, which preserves its fluidity for a long time, and is the *Balsam of acouchi*, esteemed highly by the Caribs as a vulnerary. (L.)

ICICA CARANA. (L.) Banks of the Oronoco.

Yields the fragrant substance called *Caranna*, according to most writers.

ICICA HEPTAPHYLLA. Woods of Guiana.

Trunk yields a liquid, limpid, resinous, fragrant substance, which is a valuable remedy for coughs, hardens into a whitish resin, called by the natives *Hyawa* or *Arou aou.* (L.)

ICICA ICICARIBA. *Amyris ambrosiaca.* Brazil.

Yields *Coumia.* (G.) The fragrant fennel-scented resin of Brazil, called *Elemi*, is said to be produced by this tree. De Candolle says, Resin of coumia comes from it, but I do not find such a substance in books. (L.) De Candolle, in the Prodromus, says it is found in Brazil, " ubi dicitur *Icicariba* et *resina Icicæ* Elemio succedanea."

ICICA TACAMAHACA. South America.

Produces one of the bitter resins called *Tacamahaca.* (L.) Another supposed species of this genus is the Copal of the Mexicans of Papantla and Misantla.

MANGIFERA. (De Cand. ii. 63.)

MANGIFERA INDICA. *Mangoe.* East Indies.

Fruit eaten raw; *pickled mangoes,* used as sauce; *preserved mangoes,* the fruits peeled and pressed into sheets like brown paper. (G.) This fruit is to the inhabitants of India what the peach is to the Europeans, but the inferior kinds have so much of the turpentine flavour as to be uneatable; from wounds made in the bark there issues a soft reddish brown resin which age hardens and renders exceedingly like bdellium; burnt in the flame of a candle, it emits a smell like that of Cashew-nuts while roasting; it softens in the mouth, adheres to the teeth, has a slightly bitter taste, with some degree of pungency; dissolves almost entirely in spirits, and in a great measure in water. (L.)

PICRAMNIA. (De Cand. ii. 62.)

PICRAMNIA ANTIDESMA. *P. triandra, Pseudo Brasilium, Brasilletto.* Jamaica and Hispaniola.

Wood used to dye red.

PISTACIA. (De Cand. ii. 64.)

PISTACIA ATLANTICA. Barbary.

Yields *Barbary mastich,* called *Tum;* fruit acidulous.

PISTACIA LENTISCUS. *Mastich-tree.* Shores of Mediterranean.

Yields by incision *Mastich;* berries yield oil; wood used in dyspeptic affections, gout, and dysentery. (G.) It is also employed to strengthen and preserve the teeth, in old obstinate gleet, diarrhœa, &c. (L.)

PISTACIA TEREBINTHUS. *Turpentine-tree.* Syria.

Yields by incision *Scio turpentine;* fruit styptic, pickled for eating; bark resinous, substituted for narcaphte. (G.) *Cyprus turpentine* is obtained from the trunk by incision; when pure, this is very thick, yellowish, sweet-scented, resembling lemon or fennel in some degree, with an agreeable and by no means acrid taste; follicular horn-like galls are produced on this species, which have been used, according to Clusius, in the manufacture of a sanative and glutinous balsam. The purest turpentine is obtained by crushing these young galls and filtering the juice. (O'Sh.)

PISTACIA VERA. *Pistacia-nut.* (Var. β.) *P. trifolia.*

Kernel oily, sweeter than those of almonds, forms a green emulsion, cooling; fruit eaten. (G.) Fruit commonly employed in the south of Europe at the dessert, for confectionary; it contains a considerable quantity of fixed oil, and makes an excellent emulsion for irritation of the urethra, and for other purposes. (L.)

PROTIUM. (De Cand. ii. 78.)

PROTIUM JAVANICUM. *Amyris protium.* Java.
Shells of the fruit yield an essential oil.

RHUS. (De Cand. ii. 66.)

RHUS COPALLINA. North America.
Yields *West Indian copal.*

****RHUS CORIARIA.** *R. obsoniorum, Common elm-leaved sumach.*

Fl. whitish green. July, August. Large shrub. Native of South of Europe.

Bark, leaves, flowers, and fruits, acidulous, very astringent; shoots and leaves imported and sold ground, for dyeing.

****RHUS COTINUS.** *Red sumach, Venice sumach, Venus sumach.* Native of South of Europe.

Very astringent; wood, *young fustick*, yellow, dyes coffee colour, and with nitro muriate of tin an orange colour; fruit, *Sumach berries*, astringent.

RHUS GLABRA. *Common Pennsylvanian sumach.*
Bark febrifuge, used in dyeing red.

RHUS JAVANICUM.
Berries boiled in water yield resin.

RHUS METOPIUM. *Hog-gum-tree.* West Indies.
Yields *hog gum.*

RHUS PERNICIOSA. North America.

RHUS PUMILA. North America.

Both poisonous, the latter is the most venomous of the whole genus. (L.)

RHUS RADICANS. North America.
Juice vesicatory.

RHUS STRIATA. South America.
Juice of bark yields a black colour.

RHUS TOXICODENDRON. *Poison oak, Poison ivy.* United States.

Juice caustic, dyes linen, &c. black; raises blisters on the skin, and is poisonous taken internally; leaves, *Toxicodendron, P. U. S., Toxicodendri folia*, stimulant, narcotic, used in palsy; dose gr. ss. to gr. iv., twice or thrice a day. (G.) Yields abundantly a yellowish, narcotic, acrid, milky juice, which becomes black when exposed to the air, and forms an indelible ink when applied to linen; this juice, and even the exhalations from the plant, are extremely poisonous to many persons, though not to all; they bring on itching, redness, and tumefaction of the affected parts, particularly of the face, succeeded by blisters, suppuration, aggravated swelling, heat, pain, and fever, but these effects are rarely fatal; it is employed in powder, infusion, and extract, internally in certain diseases; it has been administered with success, in the dose of a tea-cup of the infusion, to consumptive and anasarcous patients; has been employed with supposed benefit in consumption, and is well spoken of in cases of herpetic eruption, palsy, mania, and paralysis. (L.)

RHUS TYPHINUM. *R. virginianum*, *Virginian sumach.*

Berries astringent, used in fluxes of different kinds; juice of the stem raises blisters on the skin.

RHUS VENENATA. *R. vernix*, *Poison tree*, *Poison ash*, *Poison sumach.* North America.

Yields by incision *Japanese varnish;* milky juice dyes linen, &c. black. (G.) The juice, or even air impregnated with the volatile principle of this plant, is to many persons a serious poison, producing severe and dangerous erysipelatous swellings; Kalm mentions a person who, by the simple exhalation, was swollen to such a degree, that he was as stiff as a log of wood, and could only be turned about in sheets; some constitutions are, however, but slightly or not at all affected by it. (L.)

SEMECARPUS. (De Cand. ii. 62.)

SEMECARPUS ANACARDIUM. *Anacardium orientale*, *A. latifolium*, *A. officinarum*, *Marking nut.* East Indies.

Nut, *Malacca bean*, boiled for the oil; contains a caustic, black, oily mucilage, and then a sweet white kernel, which is cephalic, and increases the memory; the mucilage is used externally in disorders of the skin; green fruit used for marking, eatable. (G.) Wood contains much acrid juice, which renders it dangerous to those who work upon it; receptacles eaten like apples when roasted; the pure black acrid juice employed externally by the natives of India to remove rheumatic pains, aches, and sprains, a little being rubbed over the parts affected, and is an efficacious remedy, except in such constitutions as are subject to inflammations and swellings; universally used to mark linen; employed by the Telinga physicians, mixed with garlic and other substances, in almost every sort of venereal complaint; bark mildly astringent. (L.)

SCHINUS. (De Cand. ii. 74.)

SCHINUS MOLLE. Mexico and Peru.

Yields *Peruvian mastich;* wood purgative, detersive, astringent; fruits make a kind of wine, rather acrid, soon turning into vinegar. (G.) A white odoriferous substance, resembling gum elemi, is also procured from the leaves, and, dissolved in milk, is used in diseases of the eyes; of the bark boiled in water lotions are made for healing tumours and reducing inflammations. (L.)

Spondias. (De Cand. ii. 74.)

Spondias dulcis. *S. citherea, Otaheite apple.* South America, &c.

Fruit edible, acid, cooling.

Spondias entra. *Hogplum.*

Bark used externally as a fomentation in anasarca.

Spondias lutea. *S. myrobalanus, Mombin.* Warm parts of America.

Yields rosin; fruit acerb, acidulous, laxative.

Spondias mangifera. *S. amara.* East Indies.

Trunk when wounded yields large quantities of a mild insipid gum, exactly like gum arabic. (L.)

Stagmaria. (L. Med. B. 286.)

Stagmaria verniciflua. East Indies.

Resin copious, extremely noxious and acrid, causing excoriation and blisters when applied to the skin; the exhalations from the tree are so deleterious, as to render it unsafe to remain beneath its shade; it yields one of the celebrated hard black lackers or varnishes of China. (L.)

Order 63. LEGUMINOSÆ. (De Cand. ii. 93.)

Calyx of five (rarely four) sepals, more or less united at the base, and therefore five-dentate, five-cleft, or five-partite; *sepals* generally unequal, sometimes sub-equally coherent, sometimes concreted into two lips, the upper consisting of two sepals, which are either free at the apex, or entirely united; the lower of three sepals, generally distinct at the apex; *petals* five, or by abortion 4—3, 2—1, or none, generally unequal, inserted into the base of the calyx, (seldom on the torus,) generally imbricated in æstivation, (rarely valved,) almost always free, (sometimes united into a gamopetalous corolla); *stamens* inserted with the petals, generally double their number, (seldom three or four times their number or fewer); the *filaments* free, variously united, being either monopetalous, with the tube entire or cleft, open above, or diadelphous, nine and one, or five and five, very rarely triadelphous; *anthers* two-celled; *carpel* generally one, the others being abortive; *ovary* sessile or stipitate, free; *style* one, filiform, arising from the upper suture; *stigma* terminal or lateral; *legume* two-valved, membranous, coriaceous, dehiscent, or indehiscent, one-celled, or, by the folding in of one of the sutures, longitudinally two-celled, or, by transverse membranes or articulations, many-celled; *seeds* one, two, or more, affixed to the upper suture, inserted alternately into each valve, generally oval or reniform; *funiculus* various, seldom expanded into an arillus; *testa* smooth; *endopleura* often tumid, resembling an albumen; *embryo* sometimes straight, at other times bent over the commissure of the lobes, in either case directed towards the hilum; *cotyledons* foliaceous or fleshy, the first exsert, the latter germinating within the spermoderm underground. *Trees, shrubs,* or *herbs,* with alternate, bistipulate, simple, or variously compounded petiolated *leaves.*

Abrus. (De Cand. ii. 381.)

Abrus precatorius. *Glycine abrus.* India and America.

Root, *Jamaica wild liquorice,* yields an extract like liquorice, but diaphoretic, pectoral, demulcent; seeds, *Jumble beads,* sold at the china shops, ophthalmic, cephalic. (G.) The seeds have been incorrectly stated by some to be very deleterious, two or three being, according to Herman, a mortal dose;

they are, on the contrary, perfectly innocuous, and although hard and indigestible, form an article of food in Egypt. (L.)

ACACIA. (De Cand. ii. 448.)

ACACIA AMARA. East Indies.

Bark bitter.

ACACIA ARABICA, *A. nilotica*, *Mimosa arabica*, *Barbura*, *Babul.* India and Arabia.

Yields *yellow gum arabic.* (G.) Bark a powerful tonic. (L.) (Said by Ehrenberg to be a mere variety of A. vera.)

ACACIA CATECHU. *Mimosa catechu.* East Indies.

Yields *Terra japonica.* (G.) Yields *Bengal catechu*, but according to Dr. Pereira of inferior quality. (L.)

ACACIA FARNESIANA. *Mimosa farnesiana*, *Vachellia f.* East and West Indies.

Bark exudes a considerable quantity of gum. Flowers distilled yield a delicious perfume. (L.)

ACACIA FERRUGINEA, *Mimosa ferruginea.* India.

Bark strongly astringent, added to jaghery water in India forms an intoxicating liquor. (L.)

ACACIA GUMMIFERA. Africa.

It is by no means certain that the *Sassa gum*, ascribed by some to Inga sassa, is not produced by this plant. Dr. Pereira refers *Barbary gum* to it. (L.)

ACACIA LEUCOPHLEA. *Mimosa leucophlea*, *A. alba.* Coast of Coromandel.

Properties similar to those of A. ferruginea.

ACACIA ÖRFOTA. *Mimosa örfota.* Arabia.

Leaves prevent fresh camel's milk from becoming acid for several days; fumigation with the wood and resin employed with success by the Arabs in epilepsy. (L. *ex Forskal.*)

ACACIA SCANDENS. *Mimosa scandens*, *Coccoon.* Brazil.

Seeds eaten.

ACACIA VERA. *Mimosa nilotica.*

From this the best *gum arabic* is said to be obtained.

The following species also yield a gum like gum arabic.

A. EHRENBERGII, A. SENEGAL, A. SEYAL, A. TORTILIS.

Several New Holland species also yield a gum like catechu, especially A. mollissima, A. decurrens, and A. melanoxylon. The extract of this bark has been exported in considerable quantity under the name of *extract of mimosa bark*, from Van Diemen's Land. The bark itself is also brought in in large quantities. (L.)

ADENATHERA. (De Cand. ii. 446.)

ADENATHERA PAVONIA. East Indies.

Wood substituted for red sanders.

AGATI. (De Cand. ii. 266.)

AGATI GRANDIFLORA. *Æschinomene grandiflora*, *Coronilla* *grandiflora, Sesbana grandiflora, Bastard sensitive plant.* India.

Seeds eatable; yield *Gum agati;* used in dyeing. (G.) Bark principally bitter and tonic. (L.)

ALHAGI. (De Cand. ii. 352.)

ALHAGI MAURORUM. *Hedysarum alhagi, Manna hebraica, Camel's thorn.* Egypt, Syria, Persia, &c.

Yields *Persian manna.* (G.) From the branches of this plant there exudes a sweet substance of the nature of manna, the *Terengjabim* of the Arabs, which is gathered by merely shaking the branches; some writers are of opinion that this was the manna on which the children of Israel were fed in the wilderness. (L.)

ALOEXYLON. (De Cand. ii. 518.)

ALOEXYLON AGALLOCHUM. *Aquilaria ovata.* Cochin China.

Wood, *Aloes wood, Calambac, Eagle wood, Lignum aloes,* white, buried for some time becomes dark and resinous; cordial, alexiterial; used in fumigations and pastiles; *Aghilcuttay, Lignum aspalathe,* reddish, resinous, added to Sandal wood to increase its fragrancy. (G.) This tree produces one of the two sorts of *Calambac, Eagle wood,* or *Lign aloes,* a fragrant substance, which Loureiro states consists of a concretion of the oily particles into a resin in the centre of the trunk; it is brought on by some disease, and the tree in time dies of it; of all perfumes this is the most grateful to oriental nations; it is stimulant, corroborant, cephalic, cardiac; the scent is used against vertigo and paralysis; the powder prevents vomiting, and stops diarrhœa by its tonic but astringent properties; its name, *Aloe wood,* has nothing to do with aloes, being a corruption of its Arabic name *Allowat* or *Allieh.*

ANAGYRIS. (De Cand. ii. 99.)

ANAGYRIS FŒTIDA. *Stinking bean trefoil.* South Europe.

Leaves emmenagogue, cephalic; seeds diuretic. (G.) Seeds said to be poisonous like those of Cytisus laburnum. (L.)

ANTHYLLIS. (De Cand. ii. 168.)

ANTHYLLIS HERMANNIÆ. *Cytisus græcus, Aspalathus, Spartium spinosum, Trefoil acacia.* Greece, Spain.

Roots diuretic. (L.) Yields *Italian acacia.* (G.)

*ANTHYLLIS VULNERARIA. *Wound wort.*

Fl. yellow or reddish. May, August. Perennial. Dry pastures.

Has had a great reputation as one of the best of styptics. (L.) Dyes yellow. (G.)

ANDIRA. (De Cand. ii. 475.)

ANDIRA INERMIS. *Goeffræa inermis. Cabbage tree, Worm bark tree.* Tropical America.

Bark bitter, astringent, febrifuge, and vermifuge, in doses of ℈j. to ʒj., but the dose should be less at first, and gradually increased, lest it should occasion vomiting, delirium, and fever. (G.) Bark anthelmintic, it has a disagreeable smell, and a sweet mucilaginous taste; its effects are drastic, emetic, purgative, and narcotic; poisonous in large doses, producing violent vomiting, fever, and delirium. (L.)

Andira retusa. Cayenne.

Has similar properties to the preceding.

Apios. (De Cand. ii. 390.)

Apios tuberosa. *Glycine apios.* North America.

Root farinaceous.

Arachis. (De Cand. ii. 474.)

Arachis hypogæa. America and Africa.

Seeds, *Earth peas*, *Pindars*, *Ground nuts*, nourishing, yield oil, made into chocolate; root sweet. (G.)

Arthrolobium. (De Cand. ii. 311.)

Arthrolobium scorpioides. *Ornithopus scorpoides*, *Scorpioides*, *Scorpion wort.* South of France, Italy, and Spain.

Herb stimulant, applied externally to bites of venomous animals. (G.) Leaves vesicant. (L.)

Astragalus. (De Cand. ii. 281.)

Astragalus creticus. Crete.

Astragalus gummifer. On Lebanon.

Exude *Gum tragacanth.* (G.) A. creticus is said by Martius to produce the sort of tragacanth that is received in the form of threads or slender strips; that produced by A. gummifer also is inferior in quality, while A. tragacantha is said by De Candolle to yield no tragacanth. (L.)

*Astragalus glycyphyllos. (E. B. 203.) *Liquorice vetch*, *Sweet milk vetch*, *Wild liquorice.*

Fl. dingy yellow. July. Perennial. Woods and thickets.

Root sweet, used for liquorice; leaves used in retention of urine.

Astragalus syriacus. *Astragalus*, *milk vetch.* Syria.

Root astringent, diuretic.

Astragalus verus. Persia.

The principal part of the *Tragacanth* used in Europe is said by Olivier to be yielded by this plant; Martius also ascribes the *Cake tragacanth* to it. (L.)

Baptisia. (De Cand. ii. 100.)

Baptisia tinctoria. *Podalyria tinctoria.* United States.

Root dyes black. (G.) Yields *indigo* of indifferent quality; roots and herbage antiseptic, sub-astringent, cathartic, and emetic. (L.)

BAUHINIA. (De Cand. ii. 514.)

BAUHINIA TOMENTOSA. India.

Dried buds and young flowers prescribed in dysentery in India. (L.) The leaves of several species of Bauhinia are employed in Brazil under the name of *Unha de boy*, or *Oxhoof*, as mucilaginous remedies. (L. *ex* Martius.)

BOWDICHIA. (De Cand. ii. 519.)

BOWDICHIA VIRGILIOIDES. South America.

Said by Humboldt to produce *alcornoco bark.*

BUTEA. (De Cand. ii. 415.)

BUTEA FRONDOSA. *Erythrina monosperma.* India.

Yields by incision, *Gummi rubrum astringens.* (G.) The juice which exudes naturally from cracks and wounds in the bark, hardens into a most beautiful ruby-coloured astringent gum, which dissolves perfectly in water, and partially in spirit; infusions of the flowers dye cotton cloth, previously impregnated with a solution of alum, of a beautiful bright yellow; a little alkali changes it into a deep yellow orange; lac insects are frequent on the small branches and petioles; Guibourt considers that this plant produces the *Cachon en masse*, or *Cachon lucide*, but Dr. Pereira doubts it. (L.) Furnishes *Palass goond*, or *Bengal kino*, a powerful astringent, used in chronic diarrhœa; as an external astringent application it is quite unrivalled; flowers give a fine yellow dye. (O'Sh.)

BUTEA SUPERBA. India.

Properties the same as the preceding plant. (L.)

CÆSALPINA. (De Cand. ii. 481.)

CÆSALPINA BRAZSILIENSIS. *C. bahamensis.* West Indies, &c.

Wood, *Bahama brazilletto*, used to dye red; gives a deep colour to water.

CÆSALPINA CORIARIA. *Poinciana coriaria.* South America.

Pods, *Libidibi*, used in tanning.

CÆSALPINA CRISTA. South America.

Wood, *Brazil wood*, *Lignum brasiliense*, very hard, sinks in water, pale when fresh cut, but turns nearly black by exposure to the air; used to dye red, and for ink. (G.)

CÆSALPINA ECHINATA. South America.

Wood, *Nicaragua wood*, *Bresil de St. Martha*, *Stockvisch trout*, in short logs, with a thin bark, much split, very hard and heavy, smells like salt fish, used to dye red.

CÆSALPINA NUGA. *Guilandina nuga.* Moluccas.

A decoction of the roots used, according to Rumph, in calculous and nephritic complaints. (L.)

CÆSALPINA SAPPAN, *Guilandina sappan.* East Indies.

Wood, *Chappungham wood, Sappan, Bois d'Inde, Brisellet des Indes;* used to dye red.

CÆSALPINA BIJUGA. *C. vesicaria, Poinciana bijuga.* Jamaica.

Wood, *Bastard nicaragua wood,* brown, dyes red.

CARAGANA. (De Cand. ii. 268.)

CARAGANA ARBORESCENS. *Robinia caragana.* Siberia.

Seeds oleaginous, eatable.

CASSIA. (De Cand. ii. 489.)

CASSIA ABSUS. Ceylon.

Leaves, reverse ovate, two awl-shaped glands at the base of the petiole; mixed with those of C. acutifolia; seeds, *Tschischim seminæ,* applied with sugar to the eyes in the Egyptian ophthalmia. (G.)

CASSIA ACUTIFOLIA. *C. Senna.* (Lindl.) *C. orientalis.* Upper Egypt and Nubia.

Leaves, *Mecca senna, Pilgrim senna, Senna Alexandrina, Sennæ folia.* This plant furnishes the principal part of the senna consumed in this country, and when unadulterated, it is one of the best of all purgatives, but is very much mixed, in some samples it is said to the extent of twenty per cent., with leaves of Tephrosia apollinea and Cynanchum argel, and it is even reported to be mixed with Coriaria myrtifolia; these adulterations are, however, easily detected by any careful observer; the leaves of T. apollinea are obovate, almost wedge-shaped; those of Cynanchum argel thick, veinless, longer, downy or smooth; and of Coriaria ribbed. (L.)

CASSIA ÆTHIOPICA. *C. ovata, Sene de Nubia.* Nubia.

This furnishes exclusively the *Senna of Tripoli,* which, according to Guibourt, is extremely uniform in its appearance. (L.) Leaves, *Tripoli senna, Senna Tripolitana,* large, blunt, rough, darkish green. (G.)

CASSIA ALATA. *C. herpetica, Ringworm bush.* Warm parts of America, India.

Flowers used to cure tetters; bruised leaves and expressed juice, used against itch, tetters, and ring-worm. (G.) The Telinga and Tamul physicians say that this plant cures all poisonous bites and venereal outbreakings, and also strengthens the body; fresh leaves often employed to cure ring-worm. (L.)

CASSIA BRASILIANA. *C. mollis, C. javanica, Horse cassia.*

Pulp purgative, bitter.

CASSIA CHAMÆCRISTA. *Canepiece sensitive plant.* West Indies.

Used against the poison of the night shade.

CASSIA ELONGATA. *C. lanceolata.* (Royle.) India.

The dried leaves form the finest senna of commerce, known by the name of *Tinevelly senna.* (L.)

CASSIA EMARGINATA. *West Indian senna.* West Indies.

Pulp of the pods laxative; leaves purgative, used as senna.

CASSIA FISTULA. *Cathartocarpus fistula, Cassia stick tree.* East Indies, &c.

Fruit, *Cassia fistula*, two feet long, size of the thumb, imported from the West Indies; pulp purgative, cooling; an extract of the pulp gently laxative; seeds in the dose of 4—6 drachms purgative; roots reputed an excellent febrifuge. (L.)

CASSIA LANCEOLATA. (Forsk.) Arabia.

Leaves, *Mocho senna, East Indian senna, Senna Arabica*, very long, lanceolate, equal sided, smell weak. (G.) Forskahl asserts that this is the true senna of Mecca, and not C. elongata, as supposed by some. (L.) It must be here remarked that the C. lanceolata of D. C. appears to be the same as C. acutifolia, and not the true lanceolata.

CASSIA MARYLANDICA. *American senna.* North America.

Leaves purgative. (G.) Nearly resembles senna in its properties; according to Bigelow about one-third more of the leaves of this plant than of true senna is required to produce a given effect. (L.)

CASSIA MEDICA. Brazil.

Root called *Febra-fuge;* used instead of cinchona. (L.)

CASSIA OBOVATA. India, Africa, &c.

The leaves of this furnish the inferior senna, known by the name of *Aleppo* and *Italian.* (L.)

CASSIA OCCIDENTALIS. *Jamaica piss-a-bed, Stinking weed.* West Indies.

Expressed juice useful in eruptions; root diuretic. (G.) The root greatly stimulates the lymphatic system, and is, therefore, very beneficial in obstructions and weakness of the stomach and also incipient dropsy, against which disease it is used as a diuretic. (L. *ex* Martius.)

CASSIA SENNA.

Leaves, *Italian senna, Coromandel senna, Country senna;* nearly ovate, petiole not glandular; more numerous and less active than the Alexandrian; used in the East Indies for senna.

CASSIA TORA. *C. obtusifolia, Senna tora.* Arabia.

Leaves used to adulterate C. obovata, to which it bears a good deal of resemblance; it may, however, be readily known by its leaflets never being in more than three pairs, by their distinctly cuneate form, and ciliated margin, by the gland between the lowest pair, and especially by the pods, which are long, slender, and quadrangular, instead of being flat and falcate. (L.)

CERATONIA. (De Cand. ii. 486.)

CERATONIA SILIQUA. *Caroba ceratia*, *Siliqua dulcis*, *Carob tree*, *St. John's bread.* Africa, East Indies.

Pod used as food for man and beast, and by singers to improve the voice.

CERCIS. (De Cand. ii. 518.)

CERCIS SILIQUASTRUM. *Judas tree.* South Europe.

Flowers piquant, antiscorbutic in salads. (G.)

CICER. (De Cand. ii. 354.)

CICER ARIETINUM. *Cicer*, *Chick pea.* South Europe.

Seeds, *Calavanches*, *Bhoot*, *Horse grain*, heavy but wholesome; roasted for coffee; farina resolvent. (G.)

CLITORIA. (De Cand. ii. 233.)

CLITORIA TERNATEA. *Ternatea vulgaris.* East Indies.

Root emetic. (L.)

COLUTEA. (De Cand. ii. 270.)

**COLUTEA ARBORESCENS. *Bladder senna.*

Fl. yellow. June, August, Large shrub. Native of South Europe.

Leaves and pods purgative; used for adulterating senna. (G. L.)

COLUTEA CRUENTA. South Europe.

Has similar properties.

COPAIFERA. (De Cand. ii. 508.)

COPAIFERA CORIACEA. Province of St. Paul, Brazil.

COPAIFERA LANGSDORFII. Province of St. Paul, Brazil.

Copaiva balsam is furnished by these, according to Spix and Martius.

COPAIFERA MULTIJUGA. Para.

According to Hayne this yields the copaiva exported from Para. The *balsam of copaiva*, an acrid, bitter, nauseous, liquid resin, with stimulant, diuretic, and cathartic properties, is apparently furnished by all the species of this genus. Hayne, however, discontinues the name of C. officinalis, which appears to have been given indiscriminately to many different species. (L.)

COPAIFERA OFFICINALIS. *C. jacquini.* West Indies.

From this is obtained the *Copaiva balsam* of the West Indies. (L.)

CORONILLA. (De Cand. ii. 309.)

**CORONILLA EMERUS. *Coronilla*, or *Scorpion senna.*

Fl. yellow. April, June. Large shrub. Native of South Europe.

Leaves purgative, used instead of senna by the country people. (G.) Leaves cathartic, like those of senna, but less active. (L.)

CORONILLA JUNCEA. *Polygala vera*, *Milk vetch*. South France.

Herb in decoction increases the milk.

CORONILLA SECURIDACA. *Securidaca*.

Seed extremely bitter, purgative. (G.)

CORONILLA VARIA. South Europe, Crimea.

Juice emetic. (G.) Leaves diuretic and cathartic; juice said to be even poisonous. (L.)

CYTISUS. (De Cand. ii. 153.)

CYTISUS CAJAN.

Seeds, *Pigeon peas*, *Angola pea*, *Orror*, used as food, strong tasted; young shoots pectoral; root aromatic. (G.)

CYTISUS HIRSUTUS. *Pseudo cytisus*, *Hairy shrub trefoil*. South Europe.

Leaves cooling, diuretic.

**CYTISUS LABURNUM. *Common laburnum*.

Fl. yellow. May, June. Tree. Native of lower range of Alps.

Leaves diuretic, resolvent. (G.) Seeds highly poisonous, possessing narcotico-acrid properties, supposed to be owing to the presence of an active principle called cytisin. (L.) Bark also poisonous.

CYTISUS SCOPARIUS. (E. B. 1339.) *Genista scoparia*, *Spartium scoparium*, *Common broom*.

Fl. yellow. June. Shrub. Dry hills.

Decoction of the young tops diuretic and cathartic; seeds said to be emetic; Mead and Cullen found them useful in dropsy. (L.) Tops, *Spartii cacumina*, diuretic, even to animals, who browse on them; flowers used as a pickle for the table; seeds emetic, cathartic, roasted and used as coffee. (G.)

DALEA. (De Cand. ii. 245.)

DALEA ENNEAPHYLLA. Carthagena.

Dyes yellow. (G.)

DERRIS. (De Cand. ii. 415.)

DERRIS PINNATA. Cochin China.

Root used for areca nut.

DIPTERIX. (De Cand. ii. 477.)

DIPTERIX ODORATA. *Baryosma tonga*, *Coumarouma odorata*. Guiana.

Kernel, *Tonca bean*, odoriferous; used to scent snuff; contains *Coumarine*, which exudes between the lobes.

DOLICHOS. (De Cand. ii. 396.)

DOLICHOS BIFLORUS. *Coolthi*. East Indies.

DOLICHOS BULBOSUS.
Seeds eaten.

DOLICHOS CATJANG. *Barbaty.* East Indies.
Seeds used to make soy; eaten in soup.

DOLICHOS SINENSIS. China.
Seeds eaten.

DOLICHOS TUBEROSUS. Martinico.
Roots eatable.

DORYCNIUM.

DORYCNIUM HIRSUTUM. *Lotus hirsutus, Trifolium hæmorrhoidale, Pile lotus.* South of Europe.

DORYCNIUM SUFFRUTICOSUM. *Lotus dorycnium, White lotus.* South of Europe.
Seeds useful in piles.

ERVUM. (De Cand. ii. 366.)

ERVUM ERVILIA. *Bitter vetch.* South of Europe.
Farina maturative and resolvent. (G.) Seeds poisonous; mixed with flour and made into bread, they produce weakness of the extremities, especially of the limbs; horses become almost paralytic. (L.)

ERVUM LENS. Germany.
Seeds *lentil, lens vulgaris, massoor,* difficult of digestion, astringent, hurtful to the eyes. (G.)

FABA. (De Cand. ii. 354.)

**FABA VULGARIS. *Vicia faba.*
Fl. white, with a black silky spot in the wings. June, July. Annual. Native of borders of Caspian.
Seeds, *Garden bean, Faba major,* nourishing, difficult of digestion, flatulent. *Vicia faba β.* Seeds, *Horse bean, Faba minor, F. equina,* nourishing, roasted for coffee.

GALEGA. (De Cand. ii. 248.)

GALEGA OFFICINALIS. *Ruta capraria, Goat's rue.* South of Europe.
Sudorific, vermifuge, alexiterial, useful in epilepsy and convulsions. (G.)

GENISTA. (De Cand. ii. 145.)

GENISTA CANARIENSIS. *Canary rosewood.* Canary islands, Spain.
Root, *Lignum rhodium,* yellowish, with red veins; has the scent of roses, used for fumigation, is cordial and cephalic. (G.)

GENISTA OVATA. South of Europe.
Used to die yellow.

GENISTA PURGANS. *Spartium purgans.* France.
Leaves and seeds purgative.

*GENISTA TINCTORIA. (E. B. 208.) *Dyer's broom, Dyer's greenweed, Wood waxen, Sereque.*

Fl. yellow. July. Small shrub. Pastures and thickets.

Flowers and leaves aperitive, diuretic, used to die yellow. (G.) Chiefly employed in dyeing; the whole plant affords a good yellow colour, and with woad a good green. Ray says the milk of cows feeding upon it is rendered bitter, which flavour is communicated to butter and cheese. (L. ex Smith.)

GLEDITSCHIA. (De Cand. ii. 479.)

GLEDITSCHIA TRIACANTHOS. *Triple-thorned acacia.* Virginia and Carolina.

Seeds used to feed animals; sap yields sugar. (G.)

GLYCYRRHIZA. (De Cand. ii. 247.)

GLYCYRRHIZA ECHINATA. *Prickly liquorice.* Apulia.

Root sweet, juice used in tetters and ringworms.

**GLYCYRRHIZA GLABRA. *Liquiritia officinalis, Liquorice.*

Fl. pale blue. June, September. Perennial. South of Europe.

Root, *Stick liquorice, Liquoritia, Glycyrrhizæ radix,* sweet, opening, expectorant, pectoral, diuretic; chewed, it extinguishes thirst; its infusion covers the taste of unpalatable drugs more effectually than sugar. (G.) The roots abound in a saccharine mucilaginous matter, which is slightly bitter, and readily soluble in water; a powder, and the well known common extract are prepared from it; the decoction in different forms is a common remedy for coughs, and hectic or phthisical cases. (L.)

GUILANDINA. (De Cand. ii. 480.)

GUILANDINA BONDUC. *Yellow nickar-tree.* East and West Indies.

Nuts, *Yellow nickars,* astringent, used in gonorrhœa, yaws, and convulsions. (G.) The seeds in powder are a powerful tonic. (L.)

GUILANDINA BONDUCELLA. *Grey nickar-tree.* A variety of the preceding.

Nuts pressed for oil.

HÆMATOXYLON. (De Cand. ii. 485.)

HÆMATOXYLON CAMPEACHIANUM. *Logwood.* Compeachy.

Exudes a gum; wood, *Lignum campeachense, Hæmatoxyli lignum,* in large logs without any bark, solid, inside pale reddish brown, sweetish, astringent, used to dye red or purple. (G.) Chiefly used by dyers; it is a powerful astringent, and may be employed as a substitute for kino, catechu, &c. In diarrhœa and dysentery the decoction is used with benefit. (L.)

HIPPOCREPIS. (De Cand. ii. 312.)

*HIPPOCREPIS COMOSA. (E. B. 31.) *Ferrum equinum comosum, Tufted horse-shoe vetch.*

Fl. yellow. July. Perennial. Chalky pastures.

Leaves purgative, used by the country people instead of senna. (G.)

HYMENEÆA. (De Cand. ii. 511.)

HYMENEÆA COURBARIL. *Lotus courbaril.* Tropical parts of America.

Exudes *Gum anime;* pods contain an acidulous nutritive farina. (G.) The mealy substance in which the seeds are embedded is sweet and pleasant, but apt to purge when recently gathered; it loses this property when it becomes old; a decoction of the pulp, allowed to ferment, forms an intoxicating drink resembling beer; a fine transparent resin of a yellowish or red colour exudes between the principal roots; it is the *Gum animi* of the shops; it burns readily, emitting a fragrant smell, and has been employed by way of fumigation in attacks of spasmodic asthma, and other embarrassments of respiration. In solution, it is given internally in doses of a tea-spoonful, as a substitute for gum guiaiacum, and employed externally as an embrocation. The resin called *Jatahy, Jatchy,* or *Copal,* and in Minas Geraës, *Jatoba,* is used, not only for various kinds of varnish, but also against tedious coughs, weakness of the lungs, spitting of blood, and incipient phthisis pulmonalis; the Caradores have a method of mixing it with sugar and rum, so as to make a very agreeable emulsion or syrup. (Martius.) A decoction of the inner bark is said to act as a vermifuge. (Macfayden.) (L.)

INDIGOFERA. (De Cand. ii. 221.)

INDIGOFERA ANIL. West Indies.

Yields much of the *Indigo* of the West Indies; powdered leaf used in hepatitis. (L.)

INDIGOFERA ARGENTEA. Egypt.

Cultivated for indigo in Egypt.

INDIGOFERA CÆRULEA. India.

Said by Roxburgh to produce the finest indigo he knew. (L.)

INDIGOFERA ENNEAPHYLLA. India.

Expressed juice given as an alterative by the native physicians in old syphilitic diseases. (O'Sh.)

INDIGOFERA TINCTORIA. *Indigo plant.* East and West Indies.

Yields *Indigo.* (G.) A decoction of the root effectually destroys vermin; the juice of the young branches mixed with honey is recommended for aphthæ of the mouth in children, and indigo in powder is sprinkled on foul ulcers to cleanse them; the disease in poultry known by the name of yaws is cured by the application of a solution of indigo by means of a rag; indigo is also used in epilepsy and erysipelas; the valuable dye obtained from it is a highly dangerous vegetable poison; the other species are equally important in regard to their dyeing qualities. (L.)

INGA. (De Cand. ii. 432.)

INGA BURGONI. *Mimosa fagifolia, I. fagifolia.* Guiana, and West India islands.

Seed purgative, but eaten. (G.) Bark acrid and astringent. (L.)

INGA SAPONARIA. Molucca and Cochin China.

Bark makes a kind of soap. (G.)

INGA SASSA. Abyssinia.

According to Bruce, this tree exudes gum in such quantity as to appear deformed by the size of the concretions; Guibourt says he met with a case of it called Gum Tragacanth, and he reckons it among the false tragacanths. (L.)

INGA UNGUIS CATI. *Mimosa unguis cati, Cat's claw.* West Indies.

In decoction diuretic. (G.) A decoction of the bark is very astringent, has the reputation of acting as a diuretic, and has been employed externally as a lotion and injection in cases of relaxation of the parts. (L.)

LABLAB. (De Cand. ii. 401.)

LABLAB VULGARIS. *Dolichos lablab, Black Egyptian bean.* Seeds nutritive.

LATHYRUS. (De Cand. ii. 369.)

*LATHYRUS APHACA. (E. B. 1167.) *Yellow vetchling.*

Fl. yellow. June, August. Annual. Borders of sandy and gravelly fields. Rare.

Seeds narcotic, producing excessive headache if eaten abundantly in the ripe state; young and tender, they are served sometimes at table like green peas, and then are harmless. (L.)

LATHYRUS CICERA. Spain.

Flour, with which the seeds have been ground up, is poisonous. (L.)

LATHYRUS SATIVUS. *Chick-pea, Keesari.* Spain.

Seeds nutritive.

LATHYRUS TUBEROSUS. *Tuberous vetch.* Various parts of Europe.

Root tuberous, sweet, yields fecula; sold for salp roots. (G.)

LOTUS.

*LOTUS CORNICULATUS. (E. B. 2090.) *Common bird's-foot trefoil, Yellow lotus.*

Fl. yellow. July, August. Perennial. Pastures.

Anodyne, emollient, used in burns; petals turn green in drying.

LUPINUS. (De Cand. ii. 406.)

**LUPINUS ALBUS. *White lupine.*

Fl. white. July, August. Annual. Native of Asia.

Seeds rather bitter, emmenagogue, vermifuge, used as food, and externally in resolvent poultices.

LUPINUS VARIUS. *L. sylvestris, Wild lupine.* Spain.

Seeds bitterish, but nutritive.

MEDICAGO. (De Cand. ii. 171.)

*MEDICAGO CIRCINATA. *Anthyllis, Sea-kidney vetch.* South of Europe.

Herb used in dysury.

*MEDICAGO LUPULINA. (E. B. 971.) *Trifolium luteum minimum, Black medick* or *nonsuch, Little yellow trefoil, Melilot trefoil.*

Fl. small, yellow. May, August. Annual. Waste ground.

Herb lenifying.

*MEDICAGO SATIVA. (E. B. 1749.) *Lucerne.*

Fl. purple. June, July. Perennial. On chalky soils.

Seeds dye yellow.

MELILOTUS. (De Cand. ii. 186.)

MELILOTUS CÆRULEA. *Blue melilot.* Germany.

Properties similar to those of M. officinalis.

MELILOTUS ITALICA. *M. vera, Trifolium melilotus Italica, Italian melilot.* Italy.

Herb suppurative.

*MELILOTUS OFFICINALIS. (E. B. 1340.) *Trifolium melilotus officinale, Yellow melilot.*

Fl. yellow. June, July. Annual. Bushy places.

Herb pectoral, discussive, causes the peculiar flavour of the Schabziger or scraped cheese of Germany. (G.) Decoction emollient, and occasionally employed in lotions and enemas; the odoriferous principle very fugacious; it was asserted by Vogel to be benzoic acid, but according to Guibourt and others it is *Coumarine*, the aromatic principle of the Tonka-bean. (L.)

MIMOSA. (De Cand. ii. 425.)

MIMOSA FEROX.

Seeds purgative, but eaten.

MIMOSA NATANS.

Eaten as a salad herb.

MORINGA. (De Cand. ii. 478.)

MORINGA APTERA. Egypt, East Indies.

From the seed is obtained by pressure the *Oil of Ben*, much used by perfumers as the basis of various scents, and by watch-makers because it does not readily freeze; the seeds are acrid, and have been employed in fevers, and also as rubefacients. (L.) Said also to be purgative and emetic in small quantities. (O'Sh.)

MORINGA PTERYGOSPERMA. *Guilandina moringa, Hyperanthera moringa, M. oleifera, M. zeylanica, Mouringon, Smooth bonduc-tree.* East Indies.

Root, *Mouringhy root, East Indian country horseradish*, acrid, used as a sauce; wood, *Lignum nephriticum*, diuretic, used for dyeing blue; nuts, *Ben nuts, Pois queniques, Nuces behen, Balanus myrepsica, Glans unguentaria*, yield oil by pressure; pods, leaves, and flowers eaten as pot-herbs. (G.) Leaves, flowers, and seed vessels used in curries. Roots similar in flavour to horseradish, and have the same properties; employed when bruised as an external irritant; oil of the seeds possesses the same qualities as that of the first species, said by Royle to be aperient, much used by the natives as an unguent in gout and rheumatism. Seeds used internally for their pungent and stimulating virtues. (O'Sh.) Green root employed as a stimulant in paralysis, and in intermittents, in scruple doses, also in epilepsy and hysteria. In Jamaica the wood is employed for dyeing a blue colour. (Ainslie.)

MUCUNA. (De Cand. ii. 404.)

MUCUNA PRURIENS. *Dolichos pruriens.* West Indies.

Pods, *Siliqua hirsuta*, eaten when young, imported from the West Indies; closely covered with strong, brown, stinging hairs; *Cowhage, Dolichi pubes*, occasions violent itching, which is allayed by a solution of green vitriol or oil; vermifuge by scraping the hair off a pod and taking it with treacle or syrup for a morning dose, and giving a brisk purge after two or three doses of the cowhage; root in decoction diuretic, and very useful in dropsy. (G.)

MUCUNA PRURITA. (L.) East Indies.

Pod covered with white, erect, stinging hairs, which are brown when ripe and turn black in drying; they are used as a mechanical anthelmintic, and together with the former species constitute the substance called *Cowhage*, or *Cowitch.* (L.)

MYROSPERMUM. (De Cand. ii. 94.)

MYROSPERMUM PERUIFERUM. *M. pedicellatum, Myroxylon pedicellatum, Myroxylon peruiferum. Original Jesuit's bark-tree, Kina kina, Quinquino.* Forests of Peru.

The first kind of *Peruvian bark* brought to Europe; speckled on the outside, resinous when held to the sun, odoriferous, not so bitter or astringent as the present sort from the Loxa-tree; yields a resin. (G.) The stem yields the fragrant, bitter, aromatic balsam called *Balsam of Peru*, having stimulant, tonic, expectorant properties, employed in palsy, chronic asthma, gleet, leucorrhœa, &c.; applied externally in the form of plaister, it mitigates headache and toothache; the balsam closes recent wounds. (L.)

MYROSPERMUM TOLUIFERUM. *Myroxylon toluifera, Toluifera balsamum.* South America.

The warm, sweet, fragrant, solid, stimulant balsam, called *Balsam of Tolu*, is obtained from this tree; it is used in coughs and chronic pulmonary complaints, and is preferred to the preceding on account of its flavour; in the last edition of the London Pharmacopœia it is said to be the concrete balsam of the last species, and this agrees with the statement of Ruiz; Guibourt, however, and most other writers, consider the Balsam of Tolu the produce of this species. (L.)

ONOBRYCHIS. ((De Cand. ii. 344.)

*ONOBRYCHIS SATIVA. (E. B. 96.) *Hedysarum onobrychis, Saintfoin cockshead.*

Fl. crimson. June, July. Perennial. Dry places in a chalky soil.

Herb ripening, discussive, useful in stranguary.

ONONIS. (De Cand. ii. 158.)

*ONONIS SPINOSA. (E. B. 682.) *Anonis, Resta bovis, Cammock, Petty whin, Rest harrow.*

Fl. red or white. June, July. Small shrub. Dry heaths.

Root diuretic, detersive, aperient, used in decoction. (G.)

ORNITHOPUS. (De Cand. ii. 311.)

*ORNITHOPUS PERPUSILLUS. (E. B. 369.) *Small bird's-foot.*

Fl. white, with red lines. June. Annual. Sandy heaths.

Herb lithontriptic, and used in ruptures.

OROBUS. (De Cand. ii. 376.)

OROBUS LUTEUS. Alps.

*OROBUS NIGER. (E. B. 2788.) *Black bitter vetch.*

Fl. purple. June, July. Perennial. Shady rocks, Scotland.

*OROBUS SYLVATICUS, (E. B. 518.) *Wood bitter vetch, Bastard vetch.*

Fl. purplish white. May, June. Perennial. North of England.

OROBUS VERNUS. East of Europe.

Seeds yield a resolvent farina.

*OROBUS TUBEROSUS. (E. B. 1153.) *Bitter vetch, Heath pea, Tuberous orobus.*

Fl. purple or pink. May, June. Perennial. Woods.
Roots nutritive; seeds yield a resolvent farina.

PHASEOLUS. (De Cand. ii. 390.)

PHASEOLUS ACONITIFOLIUS. *Moot.*
PHASEOLUS LUNATUS. *Duffin bean, Vellore bean*
PHASEOLUS MAX. *Krishna moog.*
PHASEOLUS TANKINENSIS.
Natives of East Indies; seeds eaten as pulse.

**PHASEOLUS MULTIFLORUS. *Scarlet runner.*
Var. *α.* PHASEOLUS COCCINEUS. Scarlet bean. Fl. red.
Var. *β.* PHASEOLUS ALBIFLORUS. Fl. white.
July, August. Annual. Cultivated in gardens. Native of Central America.

Pods eatable, nourishing; flour of the seed emollient, diuretic, nourishing.

PHASEOLUS MUNGO. *Halli moog.* East Indies.
Seeds made into sago.

PHASEOLUS RADIATUS. *Mash cally.* East Indies.
Seeds eaten as pulse. (G.) Roots narcotic. (L.)

PHASEOLUS TRILOBUS. *Dolichos trilobus.* East Indies.
Leaves considered by the Hindoo practitioners cooling, sedative, antibilious, and tonic, and useful as an application to weak eyes. (L.)

PHASEOLUS TUBEROSUS. Cochin China.
Root esculent.

**PHASEOLUS VULGARIS. *French bean, Févé de Rome, Haricot, Kidney bean.*
Fl. lilac or white. July, August. Annual. Native of India.

There are several varieties cultivated.
α. UNICOLOR. Seeds of one colour.
β. FASCIATUS. Variously striped. *Zebra-striped bean.*
γ. VARIEGATUS. Variously spotted. *Speckled bean.*
And a dwarf one, PH. NANUS.
Qualities the same as those of P. multiflorus.

PISCIDIA. (De Cand. ii. 267.)

PISCIDIA ERYTHRINA. *Erythrina piscipula, Dog wood.* Spanish Main, &c.

Bark of the root thrown into ponds or still water stupefies the larger fish, without rendering them unwholesome, and kills the smaller ones; used to cleanse foul ulcers. (G.) Tincture of the bark most powerfully and remarkably narcotic and diaphoretic, a specific in the removal of pain caused by carious teeth; it is also used as a common fish poison. (Hamilton.)

PISUM. (De Cand. ii. 368.)

**PISUM SATIVUM. *Motor pea, Garden pea.*

Fl. white or red. May, September. Annual. Native country unknown.

Green pods used in the scurvy; fresh seeds saccharine, nutritive; dry seeds heavy and flatulent.

POINCIANA. (De Cand. ii. 483.)

POINCIANA PULCHERRIMA. *Cæsalpina pulcherrima, Barbadoes pride, Barbadoes flower fence, Spanish carnations.* Originally from East Indies.

Tea of the leaves and flowers, and syrup of the flowers, purgative and emmenagogue; also the seeds in powder, dose ʒj., in common use with the negro slave girls to procure abortion. (G.) The leaves, when bruised, have a smell resembling that of savine, the infusion either of them or the flowers is considered a powerful emmenagogue, so as even to bring on abortion; the leaves are said to have been used as a substitute for senna; the seeds in powder are stated to form a remedy for the bellyache; a decoction of the leaves and flowers has also been employed with success against the fevers of Tortola; root acrid, and even poisonous; the wood makes the best of all charcoal. (L.)

PROSOPIS. (De Cand. ii. 446.)

PROSOPIS JULIFLORA. *Mimosa juliflora, M. piliflora, Cashew.* Jamaica.

Leaves and twigs fatal to cattle which browse upon them, unless they are accustomed to them; Legumes, although sweet, are also held to be noxious; this, however, is denied by Dr. Macfadyen, who says that the young shoots, leaves, and pods are very nutritious, and may be browsed upon by cattle of every kind with impunity during dry weather, and the pods are said to be as nutritious as corn; after rains, he states that the pods do become pernicious, and are fatal to horses; this he ascribes to the seeds at that time being prepared to sprout, germinating in the stomach, and giving off carbonic acid, which induces inflammation of the stomach and bowels. Great quantities of gum, having all the properties of gum arabic, may be obtained by wounding the stem and large branches. (L.)

PROSOPIS SPICIGERA. India.

Pods esculent.

PSORALIA. (De Cand. ii. 216.)

PSORALIA BITUMINOSA. *Trifolium bituminosum, Stinking trefoil.* South of Europe.

Leaves diuretic, anticancerous; seeds yield oil.

PSORALIA CORYLIFOLIA. India.

Seeds considered in India stomachic and deobstruent. (L.)

PSORALIA GLANDULOSA. *Paraguay tea.* Chili.

Leaves stomachic, vulnerary, vermifuge.

PSORALIA PENTAPHYLLA. Mexico.

Root, *Spanish contrayerva*, *Contrayerva*, slightly aromatic, taste sharp, used in typhoid fevers.

PTEROCARPUS. (De Cand. ii. 418.)

PTEROCARPUS DALBERGIOIDES. East Indies.

Wood, *Andaman red wood*, *Rood hout*, used in dyeing.

PTEROCARPUS DRACO. West Indies and South America.

Bark when wounded yields drops of red juice which soon harden into crimson tears; these are collected under the name of *Dragon's blood.* (L.) Bark, wood, and leaves remarkably astringent. (O'Sh.)

PTEROCARPUS ERINACEUS. *P. Senegalensis.* Woods of the Gambia.

When the branches are wounded a red juice flows, which hardens upon exposure to the air, and becomes a dark coloured, brittle, glittering, astringent substance, the real original *Gum kino* of the shops. (L.) For the origin of East Indian kino, see P. marsupium.

PTEROCARPUS INDICUS. East Indies.

Yields *Dragon's blood.*

PTEROCARPUS MARSUPIUM. *P. bilobus.* Circar mountains.

Roxburgh suspects this to be the tree that produces *Gum kino.* The red juice hardens into a dark red, very brittle gum resin, which on being powdered, changes into a light brown not unlike Peruvian bark; its taste is strongly but simply astringent. (L.) Dr. Royle has proved that East Indian kino is the inspissated juice of this tree. The whole of the kino brought to this country is prepared at Anjara Kandy, near Tellichery.

PTEROCARPUS SANTALINUS. Mountains of Coromandel.

Wood, *Red sanders*, *Bresille rood*, *Cœliatour hout*, *Santalum rubrum*, *Pterocarpi lignum*, resinous, odoriferous, austere, astringent, tonic, used as a red colouring ingredient in spirituous tinctures; yields a resin analogous to dragon's blood. (G.) From this is obtained *Red sandal wood*, a timber chiefly used by the dyers and colour manufacturers of the present day; but also employed to colour several officinal preparations such as the compound tincture of lavender, (L.) Also employed as the basis of various dentifrice mixtures. (O'Sh.)

PUERARIA. (De Cand. ii. 240.)

PUERARIA TUBEROSA. *Hedysarum tuberosa.* Circar mountains.

The root peeled and bruised into a poultice is employed by the natives of the mountains where it grows to reduce swellings of the joints. (L.)

SABINEA. (De Cand. ii. 263.)

SABINEA FLORIDA. *Robinia florida.* West Indies.

The violet flowers are considered as poisonous. (Schomburg ex L.)

SCHOTIA. (De Cand. ii. 507.)

SCHOTIA SPECIOSA. *Guaiacum afrum.* Cape of Good Hope. Seeds eaten.

SESBANIA. (De Cand. ii. 264.)

SESBANIA ÆGYPTIACA. *Æschynomene sesban, Sesban.* Egypt. East Indies.

Seeds stomachic, emmenagogue. (G.) Yields an excellent charcoal; used at the gunpowder works of Ishapore. (O'Sh.)

SOJA. (De Cand. ii. 396.)

SOJA HISPIDA. *Dolichos soja, Soja Japonica.* Japan, East Indies.

Seeds used to make soy; eaten in soup.

SPARTIUM. (De Cand. ii. 145.)

SPARTIUM JUNCEUM. *Genista juncea, Spanish broom.* South of Europe.

Qualities the same as common broom.

TAMARINDUS. (De Cand. ii. 458.)

TAMARINDUS INDICA. *Tamarind.* Egypt, East Indies, &c.

Pulp acidulous, cooling, laxative; stones baked, soaked in water to get off the skins, and the kernels boiled or fried, used for food. (G.) The leaves are subacid, and according to Prosper Alpinus were employed by the Arabians as an anthelmintic. (L.) *Tamarinds in the pod, Tamarindi fructus naturalis,* from Egypt in bags of six cwt. each; *Red tamarinds, Tamarindi rubri, Tamarindi præparati,* the shells broken off and syrup added to preserve the pulp; *Black tamarinds,* the shell broken off and salt added to preserve the pulp; *East Indian tamarinds,* the shell broken off and the pulp dried in the sun.

TEPHROSIA. (De Cand. ii. 250.)

TEPHROSIA APOLLINEA. *Galega apollinea.* Egypt and Nubia.

The leaves are often found mixed with those of senna; cultivated for its indigo in Nubia. (Hoskins ex L.)

TEPHROSIA PURPUREA. (L.) *Galega purpurea.* Coast of Coromandel.

Root bitter, a decoction prescribed by Indian doctors in dyspepsia, lientery, and tympanitis. (L.)

TEPHROSIA SENNA. Popayan.

Leaves used instead of senna by the people of Popayan. (L.)

TEPHROSIA TOXICARIA. *Galega toxicaria.* Cayenne.

Employed in Jamaica for the purpose of poisoning the fish in rivers. It has been suggested that this plant might be substituted for digitalis, where that plant does not grow, as its action on the human system is probably the same; as the roots of T. leptostachya and the leaves of T. senna are purgative, it is probable that this plant might act as an evacuant, combined with some peculiar depressing influence on the nervous system. (Macfadyen by L.)

TESPESIA? CERCIS? Wood, *Cam wood, Red wood, Bois de cham, Pao zaban*, red with black veins, more porous, lighter and smoother than either logwood, brasilletto, or Nicaragua green wood, from Africa.

TRIFOLIUM. (De Cand. ii. 189.)

TRIFOLIUM ALPINUM. *Alpine trefoil, Mountain liquorice.* Alps of Europe.

Root sweet. (G.) Possesses the same qualities as liquorice. (L.)

*TRIFOLIUM ARVENSE. (E. B. 944.) *Lagopus, Pes leporinus, Hare's foot.*

Fl. pale red or whitish. July, August. Annual. Sandy barren fields.

Leaves pectoral, anti-dysenteric.

TRIFOLIUM CŒRULEUM. *Lotus urbana, T. odoratum, Field trefoil.*

Herb diuretic, vulnerary, anodyne.

*TRIFOLIUM PRATENSE. *Lotus herba sylvestris, Common purple trefoil, Clover.*

Fl. purple. May, September. Perennial. Meadows and pastures.

Herb laxative.

TRIGONELLA. (De Cand. ii. 181.)

TRIGONELLA FÆNUM GRÆCUM. *Fenugreek, Maytee.* South of Europe, India.

Seed odoriferous, mucous, resolvent, stomachic, roasted for coffee, dyes yellow. (G.) A decoction of the seeds used as an emollient; poultices are made of the flour; only used in veterinary medicine. (L.) Used in India in dysenteric affections, and the Arabs employ it in poultices and fomentations. (Ainslie.)

ULEX. (De Cand. ii. 144.)

*ULEX EUROPÆUS. (E. B. 742.) *Genista spinosa, Furze, Gorse, Whins.*

Fl. yellow. February, November. Shrub. Heathy places.

Plant attenuant, diuretic, determining to the skin, occasioning nausea. (G.)

VICIA. (De Cand. ii. 354.)

*VICIA SATIVA. (E. B. 334.) *Common Vetch.*

Fl. purple or red. June. Annual. Cultivated ground.

Seeds, *tares*, detersive, astringent. The Canadian variety makes good bread.

ORDER 64.—ROSACEÆ. (De Cand. ii. 525.)

Calyx generally of five sepals, often cohering into a tube at the base, and so five-lobed, generally persistent, most frequently free, sometimes adhering to the ovary; *petals* as many as the sepals, inserted into the calyx, with a quincuncial æstivation, generally regular; *stamens* inserted with the petals, most frequently indefinite, filaments incurved in æstivation; *anthers* bilocular, dehiscing with a double opening; *ovaries* many, one-celled, sometimes solitary from abortion, sometimes by union with each other, or with the tube of the calyx, converted into what at first sight appears to be a single ovary; *styles* simple, dilated at the summit into stigmas of various forms, generally rising from the sides of the ovary, most frequently distinct, but sometimes united; *seeds* generally one or two in each carpel, rarely numerous, erect or inverted, exalbuminous; *embryo* straight; *cotyledons* sometimes leafy, sometimes fleshy. *Herbs, shrubs,* or *trees,* with alternate *leaves,* having two stipules at the base, simple or compound; *inflorescence* various.

AGRIMONIA. (De Cand. ii. 587.)

*AGRIMONIA EUPATORIA. (E. B. 1335.) *Agrimonia, Eupatorium græcorum, Agrimony.*

Fl. yellow. June, July. Perennial. Borders of fields.

Herb used in gargles, also as tea. (G.) Celebrated as a vermifuge, also used in decoction as an astringent gargle and lotion. (L.)

ALCHEMILLA. (De Cand. ii. 589.)

*ALCHEMILLA ALPINA. (E. B. 244.) *Alpine ladies mantle.*

Fl. green, with a tinge of yellow. July, August. Perennial. Mountains North of England.

*ALCHEMILLA VULGARIS. (E. B. 597.) *Bear's foot, Common ladies mantle.*

Fl. yellowish. June, July. Perennial. Alpine pastures.

Very astringent, used in decoctions as a bath, to render women's breasts firm. (G.) Decoction slightly tonic. (L.)

*ALCHEMILLA ARVENSIS. (E. B. 1011.) *Aphanes arvensis, Parsley piert.*

Fl. green. May, July. Annual. Fields, gravelly soils, &c.

Diuretic.

AMYGDALUS. (De Cand. ii. 530.)

**AMYGDALUS COMMUNIS. *Almond tree.*

Fl. rose-coloured or white, single or double. March, April. Tree. Native of north of Africa.

Kernels, *Sweet almonds, Amygdalæ dulces,* pectoral and cooling, but mawkish; imported from the south of Europe and the Barbary coast; Mogadore *Blanched almonds,* thrown into boiling water until the skin comes off by pressing between the fingers; the hot water is then strained away, the almonds thrown into cold water, peeled and dried, either in a stove or the sun, until they are brittle; *Burnt almonds,* used to colour and flavour liqueurs; *Bitter almonds, Amygdalæ amaræ*, a variety imported from Mogadore; used to relieve the flavour of the sweet, and to clear muddy water; both pressed for oil; *Almond cake, Amygdalæ placenta*, left on pressing the oil, used for washing the hands. (G.) The bitter and sweet almonds of the shops are both produced from varieties of this tree. *Sweet almonds* are scentless and farinaceous, containing a large quantity of fixed oil, used in emulsion and confection, and are a common article of food, but are apt to prove indigestible, and to bring on urticaria febrilis; their skin is irritating, and should always be removed before the almond is eaten. (L.) They also contain a peculiar substance called *emulsin*. *Bitter almonds* yield a fixed oil like that of the last variety. They also contain *emulsin*, and a peculiar substance called *amygdalin*, which is not contained in the sweet almond, and to which is due the production of the volatile oil of almonds and prussic acid, produced by the action of water and heat. (Ed.) Many fatal cases of poisoning, from the incautious use of these seeds, are recorded by medical writers; bitter almonds have nevertheless been recommended as a remedy for intermittent fever, when mixed with decoction of bark; a liqueur, called *Mandel amara*, is fabricated from them by the Italians, but it is unsafe for persons out of health, or with weak stomachs, to drink it; they also produce urticaria, and have the reputation of being an antidote to intoxication. (L.)

AMYGDALUS PERSICA, *vide* Persica vulgaris.

AMYGDALUS PUMILA. *Dwarf almond.*

Flowers purgative.

ANTIDISMA.

ANTIDISMA ALEXITERA. *Noela tali.*

Fruit cooling; leaves antiseptic.

ARMENIACA. (De Cand. ii. 531.)

**ARMENIACA VULGARIS. *Prunus armeniaca, Apricock, Tree apricot.*

Fl. white, with a tinge of red. February, March. Small tree. Native of Armenia.

Fruit, *Apricocks, Apricots, Armeniaca mala, Præcocia*, nourishing, laxative, febrile; seeds bitter, saponaceous.

ARMENIACA BRIGANTIACA. *Brançon apricots.*

Fruit acid; kernels yield oil. (G.) From the seeds is expressed the oil called *Huile de marmote.* (De Cand.)

BRAYERA. (De Cand. ii. 588.)

BRAYERA ANTHELMINTICA. *Cabotz.* Abyssinia.

Small packets of the dried flowers are sold by the Abyssinians, and, according to Mr. Brayer, are an effectual remedy for tænia, when all other medicines have failed. (L.)

CERASUS. (De Cand. ii. 535.)

Several species of Cerasus are cultivated for their fruit, and these have produced many varieties; the principal are—

CERASUS ASPERA. *Prunus aspera.* Japan.

Fruit edible.

CERASUS AVIUM. (E. B. 706.) *Prunus cerasus avium, Wild cherry.*

Fl. white. May. Small tree. Four varieties.

Fruit, *Black cherries, Cerasa nigra,* astringent, nauseous, but gives an agreeable flavour to wine or brandy. The cultivated varieties are called *merries* in Herts and Bucks, from the French *mérise.*

CERASUS CAPOLLIM. Mexico.

Bark considered a good febrifuge. (L.)

**CERASUS CAPRONIANA. *May duke, Morello cherry.*

Much cultivated, yielding some of our best cherries; nine varieties.

**CERASUS DURACINA.

Fruit known as *white, black,* and *red-heart cherries;* three varieties.

CERASUS HYEMALIS. *Prunus hyemalis.*

Fruit acerb, edible in winter.

**CERASUS JULIANA. *Gean and Guiguiers cherry, Black eagle, Hertfordshire black,* &c. Two varieties.

Flowers of all of these white. About May. Trees.

For the cultivated varieties of cherries, see *Don's Syst. Gard.,* vol. ii. p. 505.

The fruit of the cherry is cooling, nutritive, laxative; leaves used as tea in fevers; *Brandy cherries,* Morello cherries preserved in brandy; *Sour cherry, Amarelle, Prunus cerasus acida.* Fruit esculent.

**CERASUS LAUROCERASUS. *Prunus laurocerasus. Common laurel, Cherry laurel.*

Fl. white or cream-coloured. April, May. Large shrub. Native of Trebizond.

Leaves have been used in cookery for those of the bay tree, but are less aromatic, and communicate the flavour of bitter almonds; as they yield prussic acid, they act on the nervous system, and are dangerous; distilled oil of the leaves poisonous to animals. (G.)

CERASUS MAHALEB. *Prunus mahaleb, Perfumed cherry tree.* South Europe.

Wood, *Saint Lucie wood,* odoriferous, sudorific; kernels, *Macanet grains,* used to scent wash balls.

*CERASUS PADUS. (E. B. 1833.) *Prunus padus, Bird cherry.*

Fl. white. May. Small tree. Woods and coppices.

Yields a volatile oil, similar to oil of bitter almonds, and consequently a dangerous poison. (L.)

CERASUS SEROTINA. *Prunus Virginiana*, *Wild cherry tree*. Virginia and Carolina.

Bark febrifuge; plum and leaves poisonous to many animals.

CERASUS UNDULATA. *C. capricida*, *Prunus undulata*. Himalaya mountains.

So poisonous as to kill goats in Nepal. (L.)

CERASUS VIRGINIANA. *Prunus rubra*. Woods of Virginia and Carolina.

Leaves considered poisonous; bark a good febrifuge. (L.)

CHRYSOBALANUS. (De Cand. ii. 525.)

CHRYSOBALANUS ICACO. Africa.

CHRYSOBALANUS OBLONGIFOLIUS. Georgia.

Fruits eaten.

COTONEASTER. (De Cand. ii. 632.)

*COTONEASTER VULGARIS. (E. B. 2713.) *Mespilus cotoneaster*, *Cotoneaster*.

Fl. white. June. Small shrub. Limestone cliffs, Cærnarvonshire.

Fruit astringent.

CRATÆGUS. (De Cand. ii. 626.)

CRATÆGUS AZAROLUS. *Azarole.*

Fruit of a sharpish taste, saccharine, refreshing.

*CRATÆGUS OXYCANTHA. *Spina alba*, *May*, *Hawthorn*, *White thorn*.

Fl. white or red. May, June. Large shrub. Hedges.

Flowers odoriferous; fruit, *Haws*, *Cenellæ*, yields by fermentation a refreshing acidulous liquor.

**CRATÆGUS PYRACANTHA. *Mespilus pyracantha*, *Evergreen thorn*.

Fl. white. May, June. Large shrub. Native of the south of Europe.

Fruit astringent.

CYDONIA. (De Cand. ii. 638.)

**CYDONIA VULGARIS. *Cotonea*, *Pyrus cydonia*, *Quince tree*.

Fl. white. May, June. Small tree. Native of Candia.

Fruit, *Quince*, *Cydonia*, rough, astringent, binding, very stomachic; seeds, *Cydoniæ semina*, very mucilaginous. (G.) The seeds are officinal for the sake of the mucus they are covered with, and which can be extracted with hot water. The fruit forms an agreeable marmalade, and is sometimes used in the preparation of a domestic wine of some excellence. (L.)

FRAGARIA. (De Cand. ii. 569.)

FRAGARIA VESCA. (E. B. 1524.) *Alpine strawberry, Strawberry plant, Wood strawberry.*

Fl. white. May, July. Perennial. Woods and thickets.

Roots aperient; fruit, *strawberries,* cooling, opening, diuretic; dissolves the tartar off the teeth, diaphoretic; used in calculous, gout, and consumption.

GEUM. (De Cand. ii. 550.)

GEUM CANADENSE. *Chocolate root, Blood root.* North America.

Root and leaves employed in Prince Edward's Island as a mixed tonic; It is agreeably bitter, and found particularly useful in the diarrhœa of children. (L. *ex* Med. Bot. Trans., 1829, p. 8.)

GEUM MONTANUM. Alps of Europe.

Root, *Pink root,* imported from the south of Europe, and for the same purposes as *avens.*

GEUM RIVALE. (E. B. 106.) *Water avens.*

Fl. purplish-orange, June, July. Perennial. Marshes in north of England.

***GEUM URBANUM.** (E. B. 1400.) *Avens, Herb bennet, Caryophyllata.*

Fl. yellow. June. Perennial. Hedges and woods.

Roots scented like cloves; sudorific, tonic, antipodagric, stomachic, febrifuge; may be substituted for bark; when young, they give a pleasant flavour to ale, and prevent it from growing sour. (G.) They are also said to be useful medicines in diarrhœa. (L.)

GILLENIA. (De Cand. ii. 546.)

GILLENIA TRIFOLIATA. *Spiræa trifoliata, American ipecacuanha, Indian physic.* North America.

Bark of the root, *Gillenia, P. U. S.*, gr. xx., emetic, tonic, (G.) It requires a larger dose than ipecacuanha, with whose properties it agrees, but is considered uncertain in its operation. (L.)

LICANIA. (De Cand. ii. 527.)

LICANIA INCANA. *Hedycrea incana.* Guiana.

Fruit eaten.

MESPILUS. (De Cand. ii. 633.)

***MESPILUS GERMANICA.** (E. B. 1523.) *Dutch Medlar.*

Fl. large, white. May. Small tree. Hedges.

Fruit extremely astringent, even when ripe; leaves and seeds used in detersive gargles. (G.)

PERSICA. (De Cand. ii. 531.)

PERSICA VULGARIS. *Common peach.*

Fl. rose-coloured. April, May. Small tree. Gardens. Native of Persia.

There are two varieties of the peach .—

α. Flesh separating from the stone. *Freestone peach.*

β. Flesh adhering to the stone. *Clingstone peach.*

The peach yields an oil similar to the oil of bitter almonds, especially the flowers and kernels, and these parts are dangerous; Dr. Christison quotes the case of a gentleman who died in consequence of having swallowed a salad of the flower, in order to purge himself; and another of a child, which perished after taking a decoction of the flowers, in order to kill worms. (L.)

**PERSICA LÆVIS. *Nectarine.*

Fl. rose-coloured. April, May. Small tree. Native country unknown.

The two varieties of the nectarine are distinguished by the same characters as those of the peach.

The leaves and flowers of both these plants are purgative; fruit, *Persica mala*, in hot countries the same; wood used in dyeing; sold in chips, and ground. (G.)

POTENTILLA. (De Cand. ii. 571.)

*POTENTILLA ANSERINA. (E. B. 861.) *Argentina, Silver weed, Wild tansy.*

Fl. yellow. June, July. Perennial. Road sides.

*POTENTILLA ARGENTEA. (E. B. 89.) *Hoary cinque foil.*

Fl. yellow. June. Perennial. Pastures and road sides.

*POTENTILLA COMARUM. (E. B. 172.) *Comarum palustre, Pentaphyllum rubrum palustre, Purple marsh cinque foil.*

Fl. dingy purple. July. Perennial. Marshes and peat bogs.

Febrifuge; root of this last dyes a dirty red.

*POTENTILLA FRAGARIA. (E. B. 1785.) *Fragaria sterilis, Barren strawberry.*

Fl. white. March, April. Perennial. Woods, banks, &c, Root astringent, dyes red.

*POTENTILLA REPTANS. (E. B. 862.) *Pentaphyllum quinquefolium, Five-leaved grass, Creeping cinque foil.*

Fl. yellow. June, August. Perennial. Meadows and pastures.

Bark of the root used as a gargle for loose teeth; leaves febrifuge, taken as tea. (G.) Other properties the same as the next species. (L.)

POTENTILLA TORMENTILLA. *Heptaphyllum, Sept foil, Tormentilla, Tormentilla erecta, Tormentil.*

Root, *Tormentillæ radix*, very astringent, febrifuge, and not stimulant. (G.) In the opinion of some, this is one of the best medicines of its class, as it produces its astringent effects without causing excitement. Dr. A. T. Thomson recommends it in some kinds of diarrhœa; it was once considered a specific in syphilis. (L.)

Poterium. (De Cand. ii. 594.)

*Poterium sanguisorba. (E. B. 860.) *Pimpinella, Sanguisorba, Salad burnet, Small burnet.*

Fl. dull purple. July. Perennial. Dry and chalky pastures.

Used in salads; cordial.

Prunus. (De Cand. ii. 532.)

Prunus cocumilia. Woods of lower mountains of Calabria. The bark of this plant, which seems to be nothing more than a wild state of our domestic plum, is spoken of in the highest terms, as a remedy for the intermittent fevers of Calabria; in the Neapolitan hospitals it has been found superior to cinchona. (L.)

*Prunus domestica. (E. B. 1783.) *Wild plum-tree.*

Fl. white. May. Small tree. Rather rare, and a doubtful native.

There are many cultivated varieties of this plant; the principal are—

α. *P. armenoides, Mirabelle plum.*
β. *P. claudiana, Green gage.*
γ. *P. turonensis, Orleans plum.*
δ. *P. aubretiana, Magnum bonum*, or *Mogul plum.*
ε. *P. pruneauliana, Damson.*

For varieties (270) and culture of plums, see *Don's Syst. of Gard.* ii. p. 499.

Fruit laxative; *French plums, Pruna gallica*, black, acidulous, cooling, laxative, apt to purge. *Prunelloes, Imperial plums, Brignoliensa*, yellow, not apt to purge. *Prunes, Pruna, Damascena*, black, purgative.

*Prunus spinosa. (E. B. 842.) *P. sylvestris, Black thorn, Sloe tree.*

Fl. white. April, May. Large shrub. Hedges. Common.

Leaves substituted for tea; bark powdered ʒij. used in intermittent fevers; flowers ℥j., infused in water or whey, are a pleasant purge; fruit, *Sloes, Pruna sylvestria*, gives a pleasant flavour and red colour to wine; juice of the fruit stains linen of an indelible colour. (G.) Fruit globular, black, rather larger than a black currant, acid, astringent, and very austere, not eatable except when baked or boiled with a large proportion of sugar; the juice, inspissated over a slow fire, is a substitute for catechu; in some form or other this juice is said to be used in factitious or adulterated port wine; the leaves also are reckoned among the adulterations of tea in England; they possess, in fact, a portion of that peculiar aromatic flavour which exists in Spiræa ulmaria, the American Gualtheria, and some other plants, and which resembles the more delicate perfume of green tea; a water distilled from the blossoms of the sloe is said to be used as a medicinal vehicle in Switzerland and Germany. (L. ex Smith.)

PYRUS. (De Cand. ii. 633.)

*PYRUS ARIA. (E. B. 1858.) *Cratægus aria, White beam-tree, Wild pear.*

Fl. white. June. Large shrub. Woods and hedges.

*PYRUS TORMINALIS. (E. B. 298.) *Cratægus torminalis, Sorb-tree, Wild service-tree.*

Fl. white. April, May. Large shrub. Woods and hedges.

Fruit, *Wild service, Sorb, Sorbus,* ripened upon straw until soft, eatable, astringent, useful in fluxes.

*PYRUS AUCUPARIA. (E. B. 337.) *Fraxinus sylvestris, Sorbus aucuparia, Mountain ash, Quicken, Roan.*

Fl. white. May, June. Tree. Mountainous woods.

Fruit astringent, dried and powdered makes a kind of bread; infusion acidulous; seeds yield oil; bark tans better than oak bark. (G.) Flowers, bark, and root yield fully as much hydrocyanic acid as that procurable from an equal weight of cherry laurel leaves. (Lind. ex Buch. rep. xxvii. 238.) Fruit yields malic acid.

*PYRUS COMMUNIS. (E. B. 1784.) *Pear-tree.*

Fl. white. April, May. Small tree. Woods and hedges.

677 varieties of cultivated pear are enumerated in *Don's Syst. of Gardening,* ii. p. 606.

Fruit, *pear, pyrus,* nearly the same as that of the apple, but becomes much sweeter by cultivation; yields sugar.

*PYRUS MALUS. (E. B. 179.) *Apple-tree.*

Fl. pale pink. May. Small tree. Woods and hedges.

Fruit of the wild crab, *Malus sylvestris,* rough to the taste, contains an astringent principle, and much malic acid; fruit of the cultivated apple *malus,* sweet, eatable.

Don, in his *Syst. Gard.* ii. p. 624, enumerates 1400 varieties of the cultivated apple.

Rennet apple, Poma renettia C. P., the sort to be used in pharmacy.

*PYRUS SORBUS. (E. B. 350.) *P. domestica, Sorbus domestica, True service-tree.*

Fl. white. May. Large tree. Cornwall and Staffordshire. Rare.

Fruit rough, very astringent, even when softened.

ROSA. (De Cand. ii. 597.)

**ROSA ALBA. *R. alba vulgaris major*, *White or blush rose.*

Fl. white, or delicate blush, generally semi-double or double. June, July. Large shrub. Native of Germany.

Petals smell less agreeably than those of the hundred-leaf rose; more purgative.

*ROSA ARVENSIS. (E. B. 188.) *Trailing dog rose.*

Fl. white. June, July. Small shrub. Woods and hedges.

*ROSA STYLOSA. (E. B. 1895.) *R. systyla*, *Close-styled dog rose.*

Fl. pink. June, July. Small shrub. Thickets and hedges.

Hips fine flavoured.

*ROSA CANINA. (E. B. 992.) *Cynorrhodon*, *Dog rose bush*, *Wild briar.*

Fl. pink. June. Small shrub. Hedges. Very common.

Root has been recommended in hydrophobia; a decoction of it used in dysentery; fruit, *hips*, *Cynosbatos*, lithontriptic, opening; the pulp, *Rosæ canini pulpa*, makes a fine conserve; excrescences made by an insect, *Bedeguar*, *Spongia rosæ*, used in calculous diseases; petals cathartic.

**ROSA CENTIFOLIA. *Rosa flore alboplenо*, *Cabbage rose*, *Hundred-leaved rose.*

Fl. white or red, generally double. Gardens. Very common.

Petals, *Flores rosarum albarum*, *Rosæ centifoliæ petala*, astringent, purgative, yield an odoriferous distilled water, and attar of roses. (G.) The petals are collected for the distillation of rose water; they are laxative, and used in infantile diseases. (L.) *Provins rose*, *Rose de provins*, *Rosa rubra*, *C. P.*, *R. provincialis*, petals deep red, scent powerful, which they preserve after drying; astringent, tonic, cephalic; may be kept for a year or eighteen months by being closely pressed together; some prefer iron vessels for this purpose. All the varieties of the Provins roses belong to Rosa centifolia.

**ROSA DAMASCENA. *Damask rose.*

Fl. deep red. June, July. Small shrub. Native of Syria.

Petals, *Flores rosarum damascenarum*, pale red, good scent, more purgative than some others.

**ROSA GALLICA. *R. pallida*, *C. P.*, *R. rubra*, *P. L.*, *Pale red rose bush*, *French rose.*

Fl. red. June. Small shrub. South of Europe.

Petals, *Flores rosarum rubrarum*, *Rosæ gallicæ petala*, less odoriferous than those of the Provins rose; powder laxative. Don enumerates more than 200 varieties of this species. The dried petals of the unexpanded flowers, deprived of their white claws or peels, constitute the red rose leaves (*Flores rosæ rubræ*) of the shops. (Pereira.)

ROSA MOLLISSIMA.

Fruit edible.

**ROSA RUBIGINOSA. (E. B. 991.) *Sweet briar.*

Fl. rose coloured. June. Small shrub. South of England.

Leaves odoriferous, substituted for tea.

ROSA SEMPERVIRENS. *Evergreen rose.* South of Europe.

Petals musky, very purgative, used for distilling attar of roses.

RUBUS. (De Cand. ii. 556.)

*RUBUS CÆSIUS. (E. B. 826.) *Dewberry bush, Small bramble.*

Fl. white. June, July. Small shrub. Thickets and borders of fields.

Properties the same as R. idæus, but sourish.

*RUBUS CHAMÆMORUS. (E. B. 716.) *Cloudberry, Knotberry bush.*

Fl. large, white. June. Perennial. Alpine moors.

Fruit, *Cloudberry, Knotberry,* acerb, astringent, dyes a bluish purple; leaves and tops astringent.

*RUBUS FRUTICOSUS. (E. B. 715.) *R. vulgaris, Blackberry, Bramble.*

Fl. rose coloured, or white. July, August. Small shrub. Hedges, &c.

Fruit, *Blackberry,* rather acerb, eatable, but soon sickening; green twigs used in dyeing black; root used in chin cough.

*RUBUS IDÆUS. (E. B. 2442.) *Raspberry.*

Fl. white. May, June. Small shrub. Woods.

Fruit, *Raspberry, Hindberry,* cooling, cordial, communicates a fine flavour to liqueurs; leaves form astringent and detersive gargles. Varies by cultivation, producing white or red fruit.

*RUBUS SAXATILLES. (E. B. 2233.) *Chamærubus, Stone bramble.*

Fl. white. June. Perennial. Stony mountainous places.

Berry esculent.

RUBUS VILLOSUS. *American blackberry.* Humid woods, Europe and America.

RUBUS HISPIDUS. *R. trivialis, American dewberry.* Canada.

Bark of the roots febrifuge, used instead of cinchona.

SPIRÆA. (De Cand. ii. 541.)

SPIRÆA FILIPENDULA. (E. B. 284.) *Dropwort, Filipendula.*

Fl. white, tipped with pink. July. Perennial. Dry pastures in chalky and gravelly soils.

Herb astringent, diuretic; roots, dried and powdered, used for bread in famines. (G.) Both this and S. ulmaria are accounted tonics on account of their bitter astringent qualities.

*SPIRÆA SALICIFOLIA. (E. B. 1468.) *Spiked willow, Willow-leaved spiræa.*

Fl. rose coloured. July. Small shrub. Moist woods in north of England.

Seed astringent.

SPIRÆA TOMENTOSA. *Hard hack.* America.

Root *Spiræa P. U. S.* Tonic.

*SPIRÆA ULMARIA. (E. B. 960.) *Regina prati, Ulmaria, Meadow sweet, Queen of the meadows.*

Fl. cream coloured. July. Perennial. Meadows and watery places.

Herb sudorific, astringent, antispasmodic; flowers give a fine flavour to warm water. (G.) Taste of the herbage and flowers aromatic, a fragrant water, forming an agreeable aromatic beverage, may be distilled from the flowers. (L.)

SUDIA.

SUDIA HETEROPHYLLA. *Mauritius ipecacuanha.*

Bark emetic.

ORDER 65. CALYCANTHEÆ. (De Cand. iii. 1.)

Calyx coloured, tube urceolate enclosing the ovaries, limb multipartite, the lobes unequal; *petals* none; *stamens* numerous, inserted in many rows on a fleshy disk at the fauces of the calyx, the inner ones sterile; *anthers* two-celled, adnate, dehiscing externally and longitudinally; *carpels* numerous, enclosed within the parietes of the calyx, (as in the roses); *ovary* one-celled, two-ovuled, and by the abortion of one ovule, one seeded; *styles* terminal, distinct, exsert from the tube of the calyx; *stigmas* simple; *akenes* enclosed within the fleshy tube of the calyx; one-seeded, the pericarp subcorneous; *seed* ascending, hilum almost opposite the cicatrix of the pericarp; *embryo* exalbuminous, straight; *cotyledons* convolute; *radicle* inferior. *Shrubs* with opposite, simple, exstipulate, rough *leaves; flowers* solitary, pedicellated,

CALYCANTHUS. (De Cand. iii. 2.)

**CALYCANTHUS FLORIDUS. (Bot. Mag. 503.) *Carolina allspice.*

Fl. dark purplish brown. May, June. Large shrub. Native of Carolina.

Root emetic; seed poisonous.

ORDER 66.—GRANATEÆ. (De Cand. iii. 3.)

Tube of the *calyx* turbinate, limb coriaceous, 5—7 cleft, with lobes valved in æstivation; *petals* 5—7; *stamens* indefinite, filaments free; *anthers* bilocular, dehiscing in front with a double opening; *style* filiform; *stigma* capitate, papulose; *fruit* large, spherical, crowned with the limb of the calyx, indehiscent, unequally divided into two chambers by a horizontal diaphragm, the upper chamber containing from five to nine cells, the smaller and lower one three-celled, with membranous septa; *seeds* very numerous, exalbuminous; *embryo* oblong, with a short straight *radicle*, and *cotyledons* foliaceous and spirally twisted. *Small trees* or *shrubs*, with four-sided, somewhat thorny branches; *leaves* deciduous, opposite, rarely whorled or alternate, often fascicled in the axils, oblong, entire, without dots; *flowers* 2—5, scarlet, nearly sessile.

PUNICA. (De Cand. iii. 3.)

PUNICA GRANATUM. *Pomegranate.* Persia and the East.

Fruit, *Pomegranate*, *Mala punica*, *Granata*, very cooling, antibilious, astringent, cordial; rind of the fruit, *Pomegranate peel*, *Granati cortex*, *Malacorium*, astringent, detersive, vermifuge; used in tanning; from the south of Europe; double flowers of the wild trees, *Balaustiæ*, of the cultivated trees *Cytini*, tonic, astringent. (G.) A decoction of the bark of the root a powerful anthelmintic; flowers and bark of the fruit tonic and astringent; used in leucorrhœa, chronic dysentery, &c. The acid juice of the fruit used in bilious fevers. (L.)

ORDER 67. COMBRETACEÆ. (De Cand. iii. 9.)

Calyx adhering to the tube of the ovary, limb 4—5 lobed, deciduous; *petals* 4—5, inserted into the upper part of the tube of the calyx, alternate with the lobes, sometimes wanting; *stamens* inserted into the same part, twice as many as the lobes of the calyx, very rarely equal in number, or three times as many; *filaments* distinct, filiform, or subulate; *anthers* two-celled, dehiscing longitudinally; *ovary* one-celled, with from 2—4 ovules hanging from the apex of the cavity; *style* one, slender; *stigma* simple; *fruit* drupaceous, baccate, or nut-like, one-celled, by abortion one-seeded, indehiscent, often winged; *seed* pendulous, filling the cavity of the pericarp, exalbuminous; *embryo* with the radicle turned towards the hilum, plumule inconspicuous; *cotyledons* leafy, often convolute, sometimes plaited. *Trees* or *shrubs* with alternate, opposite, exstipulate, entire *leaves*; *flowers* in terminal or axillary spikes.

Bark generally astringent.

PENTAPTERA. (De Cand. iii. 14.)

PENTAPTERA TOMENTOSA. *Terminalia alata*, *T. tomentosa.* India.

Bark astringent and febrifugal. (L.)

TERMINALIA. (De Cand. iii. 10.)

TERMINALIA ANGUSTIFOLIA. *Catapha benzoin*, *Croton benzoe*, *T. benzoin.* East Indies.

A milky juice flows from the stem and concretes into a fragrant substance resembling benzoin, used in churches in the Mauritius as a kind of incense. (L. ex Royle.)

TERMINALIA BELERICA. *Myrobalanus belerica*, *Tani.* India.

Fruit, *Beleric myrobalans*, *Myrobalani belerici*, taken from ʒvj. to ℥jss., are astringent. (G.) Kernels of the fruit eaten in India and reckoned intoxicating: bark abounding in a gum resembling gum arabic, soluble in water, burning away in the flame of a candle; Ainslie reckons the fruit astringent, tonic, and attenuant. (L.) Much used in the arts as an astringent, and as the basis of several colours. (O'Sh.)

TERMINALIA CATAPPA. *Adamarum.* East and West Indies.

Fruit, *Indian almond*, nourishing, used by the sick; yields an oil. The kernels of several other species are eaten. (G.)

Bark and leaves very astringent, and yield a black paint. (O'Sh.)

Terminalia chebula. *Myrobalana chebula.* Forests of Bengal.

Fruit, *Hurr nut*, *Ink nut*, *Chebulic myrobalans*, *Myrobalani chebuli;* galls on the leaves, *Aldecay*, excellent for dyeing. (G.) Galls powerfully astringent, as fit for making ink as oak galls; they yield the chintz painters on the coast of Coromandel their best and most durable yellow. (Roxb.) With a ferruginous mud they strike an excellent black. (L.)

Terminalia citrini. *Myrobalanus citrini*, *Yellow myrobalans.* India.

Pickled myrobalans, the yellow myrobalans preserved in brine. (G.) Fruit a common article in the Hindoo Materia Medica; usually employed as a gentle purgative. (L.)

Terminalia latifolia. Jamaica.

Root used in Jamaica in diarrhœa. (L.)

Terminalia moluccana. East Indies.

Uses the same as those of T. belerica, for which it is substituted in India. (L.)

Terminalia vernix. *Varnish-tree of China.* Moluccas.

Produces the resin used in varnishing the Indian cabinets. (G.) One of the trees which furnishes the celebrated Chinese black lacquer. (O'Sh.)

Order 68. RHIZOPHOREÆ. (De Cand. iii. 31.)

Tube of the *calyx* adhering to the ovary, limb 4—13 lobed, lobes valvate in æstivation; *petals* inserted into the calyx, alternate with its lobes, and equal in number to them; *stamens* inserted with the petals, and twice or thrice their number; *filaments* free, subulate, erect; *anthers* ovate, erect, inserted into the base; *ovary* adnate to the calyx, two-celled, each cell containing two or more pendulous ovules; *fruit* indehiscent, crowned by the calyx, one-celled, one-seeded; *seed* pendulous, exalbuminous; *radicle* long; *cotyledons* two, flat. *Trees* or *shrubs* growing on the sea-shores, with simple, opposite, entire, or toothed *leaves*, with stipules between the petioles; *peduncles* axillary.

Rhizophora. (De Cand. iii. 31.)

Rhizophora gymnorhiza. *Bruguiera gymnorhiza.* East Indies.

Fruit, leaves, and even bark, eaten.

Rhizophora mangle. *Mangrove.* Warm parts of America, East Indies.

Fruit and bark used in tanning; imported from the West Indies, (G.); bark very astringent. (O'Sh.)

ORDER 69. ONAGRARIÆ. (De Cand. iii. 35.)

Tube of the *calyx* either entirely adnate to the ovary, or adherent to its base and produced beyond the ovary; limb 2—5 lobed, generally four-lobed, the lobes valvate in æstivation; *petals* as many as the lobes of the calyx, generally regular, alternate with its lobes, contorted in æstivation, and inserted in the upper part of the tube (very rarely wanting); *stamens* sometimes as many as the petals, sometimes twice as many, and in a few cases half as many; *filaments* free, filiform; *anthers* oblong or ovate; *ovary* many-celled, often crowned by a cupular gland; *styles* filiform; *stigma* capitate or lobate; *fruit* capsular, baccate, or drupaceous, two or four-celled; *seeds* numerous, (or rarely solitary,) in each cell, fixed to the central angle; *albumen* wanting, the tumid endopleura sometimes resembling albumen; *embryo* straight, with a long tapering *radicle*, and two short *cotyledons*. *Herbaceous plants* or *shrubs* with alternate or opposite *leaves*, entire or toothed, and red, purple, white, blue, or yellow, axillary or terminal *flowers*.

CIRCEA. (De Cand. iii. 63.)

*CIRCEA LUTETIANA. (E. B. 1056.) *Common enchanter's nightshade.*

Fl. white, or rose-coloured. June, July. Perennial. Woods and shady places.

Resolvent, vulnerary; formerly supposed to possess wonderful properties in regard to magic and sorcery.

EPILOBIUM. (De Cand. iii. 40.)

*EPILOBIUM ANGUSTIFOLIUM. (E. B. 1947.) *French willow, Persian willow, Rosebay willow herb.*

Fl. purplish, rose-coloured. July. Perennial. Margin of woods.

Suckers eatable; an infusion of the herb intoxicates; down of the seeds, mixed with cotton or fur, has been felted.

EPILOBIUM MONTANUM. (E. B. 1177.) *Broad smooth-leaved willow herb.*

Fl. rose-coloured. July. Perennial. Dry shady banks, &c.

*EPILOBIUM TETRAGONUM. (E. B. 1948.) *Square-stalked willow herb.*

Fl. rose-coloured. July. Perennial, Ditches and watery places.

This, and the foregoing species, are used to cleanse foul ulcers.

JUSSIÆA. (De Cand. iii. 52.)

JUSSIÆA PERUVIANA. Peru.

Leaves emollient.

ÆNOTHERA. (De Cand. iii. 45.)

*ÆNOTHERA BIENNIS. (E. B. 1534.) *Common evening primrose, Tree primrose.*

Fl. yellow. July, September. Biennial. Sandy soils, Suffolk, &c.

Root cleanses foul ulcers, and is eaten in salads.

TRAPA. (De Cand. iii. 63.)

TRAPA NATANS. *Tribulus aquaticus, Water caltrops.* Europe and Siberia.

Herb cooling; nuts, *Nuces aquaticæ*, farinaceous and nourishing. (G.) Fruit, called *Singara*, used extensively in Cashmere as an article of food, and also in China, where the kernel is roasted or boiled like the potatoe. (O'Sh.)

ORDER 70.—LYTHRARIEÆ. (De Cand. iii. 76.)

Calyx monosepalous, free, tubular, or bell-shaped; the lobes during æstivation valved or separate, their sinuses sometimes produced into small exterior lobes; *petals* inserted on the upper part of the tube of the calyx, between the lobes, various in number, sometimes none, generally very caducous; *stamens* inserted into the tube of the calyx below the petals, sometimes as numerous as they are, sometimes two, three, or four times as many; *anthers* oval, two-celled, versatile; *ovary* free; *style* filiform; *stigma* usually capitate; *capsule* membranous, covered, or surrounded with the calyx; when young, of two to four cells, eventually one-celled from the disappearance of the septa, opening longitudinally, sometimes bursting irregularly all round; *seeds* very numerous, small, exalbuminous, adhering to a central placenta; *embryo* straight; *radicle* turned towards the hilum; *cotyledons* flat, foliaceous. *Herbs* with opposite, rarely alternate, exstipulate, simple *leaves*, and axillary or terminal, spiked or racemed *flowers*.

AMMANIA. (De Cand. iii. 77.)

AMMANIA VESICATORIA. *Daud maree, Blistering ammania.* Hindostan.

Leaves acrid, universally employed by the natives of India to raise blisters in rheumatic pains, fevers, &c.; the fresh leaves, bruised, perform their office effectually in half an hour. (Lindl. ex Roxb.) In eight trials of this article blisters were not produced in less than twelve hours in any, and in three individuals not for twenty-four hours. The bruised leaves had been removed from all after half an hour. The pain was absolutely agonising till the blister rose. We should not be justified in recommending these leaves for further trial, as they occasion more pain than cantharides, and are far inferior to the plumbago (Lalchitra) in celerity and certainty of action. (O'Sh.)

GINORIA. (De Cand. iii. 91.)

GINORIA AMERICANA. *Hanchinol?* West Indies. Juice, ℥iiij., is diaphoretic, diuretic: used in syphilis. (G.)

HEIMIA. (De Cand. iii. 89.)

HEIMIA SALICIFOLIA. *Nesæa salicifolia.* New Spain, on the Volcano of Jorullo.

A powerful sudorific and diuretic; the Mexicans consider it a patent medicine in venereal disorders, and call it *Hanchinol.* (L.)

LAFOENSIA. (De Cand. iii. 93.)

LAFOENSIA AMMINATA. *Calyplectus acuminatus.* Peru. Leaves yellow, affording a yellow dye.

LAWSONIA. (De Cand. iii. 90.)

LAWSONIA ALBA. *L. inermis*, *Henna*. North of Africa.

Used to colour the nails of females of a reddish colour. (G.) It is also employed for dyeing hair.

LYTHRUM. (De Cand. iii. 80.)

*LYTHRUM SALICARIA. (E. B. 1061.) *Lysimachia purpurea spicata*, *Purple spiked willow herb*, *Spiked purple loosestrife*.

Fl. purple. July. Perennial. Watery places.

Ophthalmic, astringent, used in the winter diarrhœas of northern countries; also as tea, and to make beer. (G.) An astringent which has been recommended in inveterate cases of diarrhœa. (L.) Demulcent and astringent. (Pereira.)

ORDER 71.—TAMARISCINEÆ. (De Cand. iii. 95.)

Calyx 4—5, parted, persistent, with an imbricate æstivation; *petals* 4—5, alternate with the sepals, inserted into the base of the calyx, withering, imbricated in æstivation; *stamens* equal to, or double the number of the *petals*, the *filaments* being either free, or united into a long monadelphous tube; *ovary* free, trigonal; *style* one; *stigma* three; *capsule* three-valved, one-celled, many-seeded; *seeds* parietal, erect, or ascending, covered with down at the apex; *albumen* none; *embryo* straight; *radicle* small, inferior; *cotyledons* plano-convex, oblong. *Shrubs* or *herbs*, with slender branches; *leaves* alternate, like scales, entire; *flowers* in close spikes or racemes.

TAMARIX. (De Cand. iii. 95.)

TAMARIX AFRICANA. Egypt and the East.

*TAMARIX GALLICA. (E. B. 1318.) *French tamarish*, *Tamarish*.

Fl. pink. July. Small shrub. South coast of England.

Ashes contain sulphate of soda; a species of tamarisk affords *Arabian manna*. (G.) From this species is collected in the vicinity of Sinai an abundance of a white gummy substance resembling manna, which, however, is said to contain no mannite, but chiefly to consist of pure mucilaginous sugar, supposed to be produced by a species of coccus which inhabits the tree; the bark of the plant is slightly bitter and astringent; the galls and young shoots of this and some other species or varieties are highly astringent, and used both in medicine and dyeing in India.

MYRICARIA. (De Cand. iii. 97.)

MYRICARIA GERMANICA. *Tamarix germanica*, *German tamarisk*.

Properties the same as those of the former species.

ORDER 72.—MELASTOMACEÆ. (De Cand. iii. 99.)

Calyx divided into four, five, or six lobes, cohering more or less with the angles of the ovary, but distinct from the surface between the angles, and thus forming a number of cavities, within which the young anthers are curved downwards; *petals* equal to the segments of the calyx, arising from their base, or from the edge of a disk that lines the calyx; twisted in æstivation; *stamens* usually twice as many as the petals, sometimes equal to them in number; in the former case, those which are opposite the segments of the calyx are alone fertile; *filaments* curved downwards in æstivation; *anthers* long, two-celled, usually bursting by two pores at the apex, and elongated in various ways beyond the insertion of the filament; sometimes bursting longitudinally; before flowering contained within the cases between the ovary and sides of the calyx; *ovary* more or less coherent with the calyx, with several cells and indefinite ovules; *style* one; *stigma* simple, either capitate or minute; a cup often present upon the apex of the ovary, surrounding the style; *pericarp* either dry and distinct from the calyx, or succulent and combined with it, with several cells; if dehiscent, bursting through the valves, which therefore bear the septa in the middle; placentæ attached to a central column; *seeds* innumerable, minute, with a brittle testa and no albumen, usually with appendages of some kind; *embryo* straight, or curved with equal or unequal cotyledons. *Trees, shrubs,* or *herbaceous plants,* with opposite, undivided, usually entire *leaves,* not dotted and with several ribs; *flowers* terminal, usually thyrsoid.

MELASTOMA. (De Cand. iii. 144.)

MELASTOMA ALATA.

MELASTOMA SUCCOSA.

Juice used to wash wounds. The berries of various species of Melastoma dye a black, which is very lasting, and are many of them eatable.

MELASTOMA HIRTA. *Hairy Melastoma.* Jamaica.

Leaves powdered used to sprinkle on ulcers; berries yield a juice like that of myrtle berries; also used for ulcers.

TOCOCA. (De Cand. iii. 165.)

TOCOCA GUIANENSIS. Guiana.

Berries eatable.

ORDER 73.—ALANGIEÆ. (De Cand. iii. 203.)

Calyx superior, campanulate, 5—10 toothed; *petals* 5—10, linear, reflexed; *stamens* long, exserted, two or four times the number of the petals; *filaments* free, filiform, villous at the base; *anthers* adnate, bilocular, linear, turned inwards, dehiscing longitudinally by a double opening, often empty; *disk* fleshy, at the base of the limb of the calyx; *drupe* oval, somewhat crowned by the calyx, fleshy, slightly ribbed and downy, nucleus without valves, one-celled, bony, with a foramen at the apex; *seed* one, (or three, according to Rheed,) inverted, ovate; *albumen* fleshy, friable; *embryo* straight; *radicle* long, ascending; *cotyledons* flat, foliaceous, cordate, ovate. Large *trees,* branches often spinous; *leaves* alternate, exstipulate, ovate, lanceolate, entire, without dots; *flowers* axillary, fascicled; *fruit* eatable.

ALANGIUM. (De Cand. iii. 203.)

ALANGIUM DECAPETALUM. *Grewia salvifolia, Alangi* and *Angolum.* Stony mountains of Malabar.

ALANGIUM HEXAPETALUM. *Kura angolam, Namédoce.* Malabar.

Roots aromatic, cathartic. (G.) Said by the Malays to have a purgative hydragogue property. (L. ex Royle.) The juice of the Alangium is said to be purgative, but the fact is not well established. (O'Sh.)

ORDER 74.—PHILADELPHEÆ. (De Cand. iii. 205.)

Tube of the *calyx* turbinate, adhering to the ovary, limb with from four to ten divisions, persistent; *petals* equal in number to, and alternate with, the segments of the calyx, convolute, imbricate in æstivation; *stamens* 20—40, inserted into the fauces of the calyx, in 1—2 rows; *styles* either distinct, or more or less consolidated into one; *stigmas* many; *capsule* semiadnate to the calyx, 4—10 celled, many-seeded; *seeds* scobiform, subulate, smooth, heaped in the angles of the cells upon an angular placenta, with a loose membranous aril; *albumen* fleshy; *embryo* inverted, almost as long as the albumen; *cotyledons* oval, obtuse, rather flat; *radicle* longer than the cotyledons, superior, straight, obtuse. *Shrubs*, with exstipulate, opposite, not dotted *leaves*, with axillary or terminal *flowers* in trichotomous cymes; *flowers* always white.

PHILADELPHUS. (De Cand. iii. 205.)

**PHILADELPHUS CORONARIUS. (Bot. Mag. 391.) *Syringa, Mock orange.*

Fl. white, odorous. June. Large shrub. South of Europe.

Flowers strong scented; leaves detersive, used as tea.

ORDER 75.—MYRTACEÆ. (De Cand. iii. 207.)

Calyx of 4—6, generally five sepals, united into a tube, adnate with the ovary; *petals* inserted on the calyx, equal in number to its segments, and alternate with them, quincuncial in æstivation, very rarely none; *stamens* inserted with the petals, often in many rows, double in number, or some multiple of them; *filaments* sometimes free, sometimes connected in several parcels, curved inwards at the apex before flowering; *anthers* ovate, two-celled, small, dehiscing with a double opening; *carpels* four to six, generally five, often by abortion fewer, cohering into a many-celled ovary, adnate with the calyx; *style* simple; *stigma* simple; *fruit* various, generally many-celled and many-seeded; *seeds* variable in form; *embryo* exalbuminous. *Trees* or *shrubs*, with *leaves* generally opposite, rarely alternate, without stipules, entire, dotted with pellucid glands, and with a nerve running parallel to the margin; *inflorescence* variable, usually axillary; *flowers* red, white, occasionally yellow, never blue.

BARRINGTONIA. (De Cand. iii. 288.)

BARRINGTONIA RACEMOSA. *Eugenia racemosa, Stravadium racemosum.* Malabar.

Root slightly bitter, but not unpleasant; considered by the Hindoo doctors valuable on account of its aperient, deobstruent, and cooling properties; bark reputed to possess properties similar to those of Cinchona. (L. ex Ainslie.)

CALYPTRANTHUS. (De Cand. iii. 258.)

CALYPTRANTHUS AROMATICA. Rio Janeiro.

Young flower buds have much the same qualities as cloves, for which they might be advantageously substituted. (L. ex Aug. de St. Hilaire.)

CARYOPHYLLUS. (De Cand. iii. 261.)

CARYOPHYLLUS AROMATICUS. *Eugenia caryophyllata, Clove tree.* Molucca Islands.

Flower buds of the tree, before they open, dried and smoked, *Cloves, girofle anglais, Caryophyllus aromaticus, Caryophylli*, hot, stimulating, and aromatic; imported from the West Indies in chests; an inferior kind from Cayenne, *Girofle de cayenne;* preserved cloves are also imported; the ripe fruit, *Mother cloves, Fusses, Antophylli*, large, less aromatic; *Preserved mother cloves*, stomachic and antispasmodic; the foot-stalks, *Griffes de girofle*, used to flavour distilled spirit. (G.) Stimulant and carminative, similar in effect to Eugenia pimenta; the cloves of the shops are the dried flower buds; *Oil of cloves* is a common remedy for the tooth-ache. (L.)

EUCALYPTUS. (De Cand. iii. 216.)

EUCALYPTUS MANNIFERA. New Holland.

Exudes a saccharine mucous substance, resembling manna in action and appearance, but less nauseous; it is not produced by insects, and only appears in the dry season, (Med. Bot. Trans. l. c.); other species yield a similar secretion at Moreton Bay, and in Van Dieman's Land; Mr. Backhouse says it coagulates and drops from the leaves in particles often as large as an almond. (Comp. Bot. Mag. ii. 69.) (L.)

EUCALYPTUS RESINIFERA. *Metrosideros gummifera, Brown gum tree.* New Holland.

Yields the *Brown gum*, or *Botany Baykino.* (G.) Bark so extremely astringent as to yield a concrete juice resembling kino, and sold as such. (L.)

EUCALYPTUS ROBUSTA. New Holland.

Often contains large cavities in its stem, between the annual concentric circles of wood, filled with a most beautiful red, or rich vermillion-coloured gum. (L. ex Smith in Bot. Trans.)

EUGENIA. (De Cand. iii. 262.)

EUGENIA PIMENTA. *Myrtus pimenta, Pimento,* or *Allspice.* West Indies.

Myrtus pimenta, Allspice tree: fruit dried before it is thoroughly ripe, *Allspice, Jamaica pepper, Clove pepper, Piper jamaicense, Pimenta, Pimentæ baccæ, Piper odoratum, P. caryophyllatum*, is heating, aromatic, used as a sauce, and in liqueurs; yields an essential oil. (G.) All the plant, especially the unripe fruit, abounds in an essential oil, which is a powerful irritant, and is often used to allay toothache; the bruised berries are carminative, stimulating the stomach, promoting digestion, and relieving flatulency. (L.)

GUSTAVIA. (De Cand. iii. 289.)

GUSTAVIA SPECIOSA. New Granada.

Produces singular effects upon the constitution; according to Humboldt and Bonpland, children are very fond of the fruit, and become quite yellow after eating it, but in 24—48 hours they regain their natural colour without any remedy; in Burnett's Outlines of Botany, it is asserted by some strange mistake, that after it remains for 24 or 48 hours, nothing can erase the colour. (L.)

JAMBOSA. (De Cand. iii. 286.)

JAMBOSA VULGARIS. *Eugenia jambosa.* Malacca.
Fruit eatable, aromatic.

LECYTHIS. (De Cand. iii. 290.)

LECYTHIS ZABUCAJO. Guiana.
Seeds, *Brazil nuts*, kernels eatable.

LEPTOSPERMUM. (De Cand. iii. 226.)

LEPTOSPERMUM SCOPARIUM. New Holland.
Leaves used as tea.

MELALEUCA. (De Cand. iii. 211.)

MELALEUCA MINOR. *M. cajuputi*, *M. leucadendron*, *Kya putty tree.* Moluccas.

Leaves yield an essential oil; (*Cajeput oil*). (G.) Yields *Cajuputi*, an irritating or stimulating green, aromatic, camphorate, essential oil, used in toothache and rheumatic affections, and as an internal remedy in hysteria and epilepsy, flatulent colic and cholera. (L.) A powerful antispasmodic, diffusible, stimulant and sudorific. (Pereira.)

MELALEUCA LEUCADENDRON, *Linn. Mant.* 105, by some said to give Cajuputi oil, is asserted by Roxburgh to possess little or no fragrance in its leaves, and not to be ever employed, as far as he could discover, in the distillation of that drug. (L.)

MYRCIA. (De Cand. iii. 242.)

MYRCIA ACRIS. *Eugenia acris*, *Wild clove.* West India Islands.

Supposed to have been confounded with Eugenia pimenta, in whose aromatic qualities it altogether participates. (L.)

MYRTUS. (De Cand ii. 238.)

**MYRTUS COMMUNIS. *Common myrtle.*
Fl. white. July, August. Large shrub. South of Europe.

Leaves odoriferous, cephalic, astringent; bark and leaves used in tanning; berries used in dyeing, and to form an extract; flowers and leaves yield an essential oil by distillation, and the berries a fixed oil, *Myrteum.* (G.) Myrtle buds and berries were eaten as spice by the ancients, and are still used in Tuscany instead of pepper; the Tuscans also prepare a sort of myrtle wine, which they call *Myrtidanum;* the distilled water of myrtle flowers is that very agreeable perfume known by the name of *Eau d'ange.* (L. *ex* Burnett.)

Myrtus cheken.
Juice from the green wood used in glaucoma. (G.)
Myrtus luma.
Berries used to make wine; leaves make a very good cordial tea; root astringent. (G.)
Myrtus ugni. Chili.
Root used in dysentery; leaves used as tea.

Psidium. (De Cand. iii. 232.)

Psidium pomiferum. Mexico.
Fruit esculent.
Psidium pyriferum. *Bay plum, Guava tree.* America.
Young leaves, buds, and fruit, in decoction, astringent; marmalade of the fruit the same.

Robinsonia.

Robinsonia melianthifolia. *Touroulin Guajanensis.*
Berry edible. (G.)

Order 76.—CUCURBITACEÆ. (De Cand. iii. 297)

Flowers hermaphrodite, monœcious, or diœcious, axillary; *calyx* gamosepalous; *sepals* five, more or less coherent at the base, and adhering to the carpels through the medium of the torus; *petals* five, free, or somewhat cohering, distinct from the calyx, or rarely adhering to it, arising from the margin of the torus, entire, or rarely imbricated; *stamens* five, free, or generally triadelphous, rarely triadelphous and syngenesious; *filaments* sometimes hairy; *anthers* bilocular, very long, flexuose, rarely ovate and short; *style* short; *stigmas* 3—5, bilobed, thick, velvety, rarely fimbriated; *carpels* 3—5, fleshy, surrounded by the torus and calyx, forming a pepo or gourd, the middle nerve of the carpels being central, and the seminiferous margins external; umbilical cord tumid near the seed; *arillus* watery, becoming membranous by drying; *seeds* generally obovate, compressed, attached to the parietes of the fruit, the apex being more or less directed towards the centre, the margin often tumid (by drying, appearing 2—3 lobed at the apex and base; *hilum* oblique at the apex of the seed, the spermoderm being there abruptly perforated by the vessels of the stigma, while the vessels of nutrition encircle the margin of the seed; *embryo* straight, exalbuminous; *cotyledons* leafy, pelmatinerved; *radicle* basilar, directed towards the hilum; *root* annual or perennial, fibrous, or tuberous; *stem* sarmentaceous, herbaceous, or shrubby, generally striated; *leaves* palmate, nerved, often covered with very rough hair; *cirrhi* (or abortive leaves) solitary, lateral, undivided or divided; *flowers* solitary, paniculated, or fasciculated, yellow, white, or rose-coloured; bracteas generally wanting; branches arising from between the leaves and cirrhi.

Fruits mostly esculent, but a few have the laxative power so increased as to become drastic purgatives.

Bryonia. (De Cand. iii. 204.)

Bryonia abyssinica? *Abyssinian bryony.* Africa.
Root esculent when boiled.
Bryonia alba. *Black-berried bryony.* South of Europe.
Properties the same as B. dioica.
Bryonia callosa.
Seeds vermifuge, yield an oil.

***Bryonia dioica.** (E. B. 439.) *B. alba, Red-berried bryony, White bryony.*

Fl. with greenish veins. May, June. Thickets and hedges.

Root acrid and purgative, owing to the presence of an extractive matter called *Bryonine;* it produces violent vomiting and purging, tormina, profuse watery evacuations and fainting; it is not admitted into the British Pharmacopœias, but is a frequent instrument in the practice of quack doctors in the country; Burnett says it is sold in Covent Garden market as a discutient to remove the bruise of a blackened eye; Withering considers it one of the best cathartic medicines for horned cattle. (L.)

Bryonia epigæa. India.

Powder of the root given by the native practitioners as an aperient and alterative in doses of a pagoda weight once daily for a week in chronic dysentery and venereal affections. (O'Sh. ex Ainslie.)

Bryonia rostrata. Tranquebar.

Root prescribed in India as an astringent and emollient poultice in cases of piles; it is also used as a demulcent in form of a powder. (L. ex Ainslie.)

Cucumis. (De Cand. iii. 299.)

Cucumis anguria. } *Water melon.* { Jamaica.
Cucumis citrullus. } *Water melon.* { Africa and India.

Fruit eatable, refreshing; flesh of the fruit saccharine and watery.

Cucumis chate. Egypt and Africa.

Fruit has a sweet refreshing juice.

Cucumis colocynthis. *Colocynthis, Coloquintida,* κολοκυνθις, *Diosc.* Egypt, Turkey, Coromandel.

Fruit, *Shell colocynth,* imported from the Levant; pulp of the dry fruit, *Bitter apple, Peeled colocynth, Colocynthidis pulpa,* also imported; purgative; the fruit contains the intensely bitter resinoid called Colocynthin; it is very acrid, and a considerable number of severe cases of poisoning have occurred in the human subject; nevertheless, in combination with other substances, the extract is one of the commonest of cathartics.

Cucumis hardwickii, (Royle,) called by the natives *Puharee indrayun,* or *Hill colocynth.* Foot of the Himalaya.

Properties similar to those of C. Colocynthis. (L.)

****Cucumis melo.** *Melo, Melon.*

Fl. yellow. July, August. Annual. Native of Asia.

Fruit very refreshing, much eaten in France, where it takes the place of our potatoes.

Cucumis pseudo colocynthis. (Royle.) *Indrayun, Bisloombha.* India.

Substituted in India for the true Colocynth. (L.)

**Cucumis sativus. *C. hortensis, Cucumber.*

Fl. yellow. May, July. Annual. Native of India.

Fruit eaten, cooling; young fruit, *Girkins*, pickled for a sauce; *Salted cucumbers*, imported from Russia; seeds yield oil.

Cucumis utilissimus. (Roxb.) Bengal.

Powder of the toasted seeds said to be a powerful diuretic, and serviceable in promoting the passage of sand or gravel. (L. ex Roxb.)

Cucurbita. (De Cand. iii. 316.)

Cucurbita melopepo. *Squash.*

Fruit better tasted than that of C. pepo, but of the same quality.

**Cucurbita pepo. *Pepo, Common gourd* or *pumpkin, Pumpion.*

Fl. yellow. June, August Annual. Native of Asia.

Seeds cooling; leaves, No. 15—20, in decoction, form a purgative clyster, applied externally to burns, erysipelas, &c. (G.)

**Cucurbita ovifera. *Vegetable marrow.*

Fl. yellow. July, September. Annual. Native of Astracan.

Fruit an excellent pot-herb, coming into use in England.

Feuillea. (De Cand. iii. 298.)

Feuillea cordifolia. *F. hederacea, Cocoon antidote.* West Indies.

Alexiterial, febrifuge, used in venomous bites; kernel of the fruit, called in St. Domingo *Noix de serpente*, infused in rum or water, used against sedative poisons.

Feuillea trilobata. *F. scandens, Calabash cocoon antidote.* West Indies.

Seeds bitter and laxative, a large dose vomits. (G.) The bitter seeds of this and the last are said by Drapiez to be a powerful antidote against vegetable poisons. (Ed. Ph. J. iv. 221.) They purge and vomit with rapidity. (L.)

Lagenaria. (De Cand. iii. 299.)

Lagenaria vulgaris. *Cucurbita lagenaria, Calabash gourd, Bottle gourd.* East Indies.

Seeds cooling; leaves, No. 15—20, in decoction, form a purgative clyster. (G.) In the wild state the fruit is poisonous; some sailors died at one of our outports a few years since from drinking beer that had been standing in a flask made of a bottle gourd; Dr. Royle says that he learned from a very respectable and intelligent native doctor, attached to the gaol hospital at Saharumpore, that he had seen a case of poisoning from eating of the bitter pulp, in which the symptoms were those of cholera. (L.)

Luffa. (De Cand. iii. 302.)

Luffa amara. (Roxb. fl. ind. iii. 715.) East Indies.

Every part extremely bitter; fruit violently cathartic and emetic. Juice of roasted young fruit applied to the temples by the natives of India to cure headache. Ripe seeds, either in infusion or substance, used by them to vomit and purge. (L.)

Luffa bindaal. (Roxb. fl. ind. iii. 717.) Hindostan.

Considered in northern India a powerful drastic in cases of dropsy. (L. ex Royle.)

Luffa ægyptiaca. *Momordica luffa.* Arabia.

Used to rub the body in cutaneous eruptions; fruit eatable.

Melothria. (De Cand. iii. 313.)

Melothria pendula. South America.

Extremely drastic; four ripe fruits will purge a horse. (L.)

Momordica. (De Cand. iii. 311.)

Momordica balsamina. *Balsam apple, Cerasse.* East Indies.

Root purgative, ℈ij. in powder; plant vulnerary, balsamic, refreshing; leaves used in decoctions for clysters; fruit, infused in oil, makes a vulnerary balsam; the juice that exudes upon cutting the ripe fruit, used for fresh wounds. (G.) This plant is supposed to be that called Neurosperma cuspidata by Rafinesque, the fruit of which is said to be a dangerous poison, but in moderate doses to act as a powerful hydragogue. (L.)

Momordica charantia. *Papareh.* East Indies.

Very bitter, vermifuge; used in brewing in the East Indies.

Momordica elaterium. *Cucumis agrestis, C. asininus,* Σικυς ἄγριος, (*Dioscor.*) *Spirting cucumber, Wild cucumber.* South of Europe.

Root and herb hydragogue, vermifuge; leaves used externally, detersive and resolvent; fruit *Elaterii poma,* yields *Elaterium;* juice of the fruit hydragogue. (G.) *Elaterium* a substance obtained from the juice surrounding the seeds of this plant, is so powerful a poison, that a single grain has been known to act violently on man, but its strength and effects are uncertain; it is used in practice in the form of an extract as a violent cathartic and hydragogue. Dr. Christison quotes a case of a medical man in Paris, who, after carrying a specimen to his lodgings in his hat, was seized with acute pain, &c., in his head, succeeded by colic pains, fixed pains in the stomach, frequent watery purging, bilious vomiting, and some fever. (L.)

MURICIA. (De Cand. iii. 318.)

MURICIA COCHINCHINENSIS. China and Cochin China.

Seeds and leaves astringent and aperient; employed by the Chinese in obstructions of the liver, tumours, and malignant ulcers. Externally employed in fractures and dislocations. (L.)

TRICHOSANTHES. (De Cand. iii. 313.)

TRICHOSANTHES AMARA. St. Domingo.

Fruit very bitter, purgative, emetic, used to destroy rats. (G.) Seeds bitter and astringent, sometimes emetic. (L. ex Martius.)

TRICHOSANTHES CORDATA. (Roxb. fl. Ind. iii. 703.) *Boomee koomura.* Hindostan.

Root used by the natives of India as a substitute for Columbo root. (L.)

TRICHOSANTHES CUCUMERINA. Hedges in Bengal.

Fruit reckoned in India an anthelmintic. (L.)

TRICHOSANTHES DIOICA. Bengal.

An alcoholic extract of the unripe fruit is described as a powerful and safe cathartic, in three to five grain doses, repeated every third hour till the desired effect is produced. (O'Sh.)

TRICHOSANTHES PALMATA. (Roxb. fl. Ind. iii. 704.) India.

Fruit reckoned poisonous. (Roxb.) Pounded small and intimately blended with warm cocoa-nut oil, it is considered a valuable application in India for cleansing and healing the offensive sores that sometimes form within the ears; it is also supposed to be a useful remedy, poured up the nostrils, in cases of ozeena. (L. ex Ainslie.)

TRICHOSANTHES VILLOSA. Java.

Fruit acts like colocynth. (L.)

CARICA.

CARICA PAPAYA. *Papaw.* West Indies.

Fruit nutritive; seed an excellent vermifuge; leaves saponaceous, milky; juice corrosive; is mixed with water, and used to wash meat to make it tender. (G.) The milky juice is a powerful vermifuge; the powder of the seeds has the same property; fibrine is contained in the juice in such abundance that the latter bears a most extraordinary resemblance to animal matter; water impregnated with the milky juice makes meat washed with it tender; the same effect is produced when the meat is suspended among the branches of the trees; it first becomes tender, and then passes into a state of putridity. Vauquelin says that a sample of the juice which he examined had the taste and smell of boiled beef; the leaves are used by the negroes to wash linen instead of soap, and the fruit is eaten as a vegetable. (L.)

ORDER 77. PASSIFLOREÆ. (De Cand. iii. 312.)

Sepals 5—10, coherent into a tube, free at the apex, in 1—2 rows, the outer lobes large, foliaceous, the inner ones alternate with the former, more petaloid in appearance, sometimes wanting, fauces naked or adorned with coloured filamentous or membranous appendages, in one or many rows, and the lower part often closed by an operculum; *petals* none (in Passiflora); *stamens* five; *filaments* opposite the external lobes of the calyx, monadelphous, the tube sheathing the stalks of the ovary; *anthers* versatile, appearing extrorse, but in reality introrse; *torus* elongated into a long cylindrical stalk; *ovary* free, ovate; *style* none or short; *stigmas* three, thick, sub-bilobed at the apex; *fruit* naked, or surrounded by the calyx, supported on the stipitate torus, three-valved, one-celled: *valves* either dry and dehiscent, or fleshy, coherent, indehiscent, having a longitudinal placenta in the middle; *seeds* attached to the placenta in many rows, covered with a large and often pulpy arillus, compressed, generally furrowed. *Herbaceous plants* or *shrubs*, usually climbing, seldom erect; with alternate stipulate *leaves*, and axillary or terminal *flowers*.

PASSIFLORA. (De Cand. iii. 322.)

**PASSIFLORA CŒRULEA. (Bot. Mag. 28.) *Common blue passion flower.*

Calyx green and rose-coloured, corolla in circles of red, white, and blue. August. September. Shrub. Brazils and Peru.

PASSIFLORA INCARNATA. *Red passion flower.* Virginia, South America.

PASSIFLORA NORMALIS. *Wild passion flower.* South America.

Roots sudorific.

PASSIFLORA CONTRAJERVA. Mexico.

Said to be alexipharmic and carminative.

PASSIFLORA FŒTIDA. West Indies.

Esteemed an emmenagogue; thought to be serviceable in hysteria; the infusion of the flowers is also taken as a pectoral in the West Indies. (L.)

PASSIFLORA LAURIFOLIA. *Sweet calibash.* South America.

PASSIFLORA MALIFORMIS. *Water lemon.*

Fruit esculent.

PASSIFLORA QUADRANGULARIS. *Granadilla.*

Root emetic; powerfully narcotic, said to be cultivated in several French settlements for the sake of its root; said to owe its activity to a particular principle called passiflorine; the fruit, called Granadilla is a common article in a Brazilian dessert. (L.)

MURUCUJA. (De Cand. iii. 333.)

MURUCUJA OCELLATA. *Passiflora murucuja, Bull's hoof, Dutchman's laudanum.* West Indies.

Herb made into a syrup, or flowers infused in rum, narcotic; used for laudanum.

ORDER 78. PORTULACEÆ. (De Cand. iii. 351.)

Sepals two, seldom three or five, cohering by the base; *petals* generally five, sometimes 3—4—6, rarely none, either entirely free, or connected at the base into a short tube, and when equal in number alternate with the sepals; *stamens* inserted along with the petals either into the base of the calyx, or perhaps on the torus, variable in number even in the same species; all fertile; *filaments* free among themselves, but connected to the petals, to which they are also opposite; *anthers* versatile, two-celled, opening by a double chink; *ovary* superior, one-celled; *style* one, (sometimes wanting,) filiform; *stigmas* several, much divided; *capsule* one-celled, dehiscing either transversely or by three valves, from apex to base, rarely indehiscent, one-seeded; *seeds* numerous, affixed to a central placenta; *albumen* farinaceous; *embryo* surrounding the albumen, with a long cylindrical radicle. *Succulent herbs* or *shrubs; leaves* alternate, seldom opposite, entire, exstipulate, or with membranous ones; *flowers* axillary or terminal, usually ephemeral, expanding only in bright sunshine.

CALANDRINIA. (De Cand. iii. 358.)

CALANDRINIA UMBELLATA. *Talinum umbellatum.* Chili.

Flowers used as a cosmetic.

CLATONIA. (De Cand. iii. 360.)

CLATONIA PERFOLIATA. *C. cubensis.* West Indies, America.

Used both as a salad and potherb.

PORTULACA. (De Cand. iii. 353.)

PORTULACA OLERACEA. *Portulaca, Purslane.* Europe, India, America.

Used as a potherb, cooling, useful in scurvy, heat of urine, and bilious disorders; seeds vermifuge.

PORTULACA PILOSA. *Jamaica purslane.* West Indies.

In salads diuretic, as also its expressed juice.

PORTULACA QUADRIFIDA. India.

The bruised fresh leaves are prescribed as an external application in erysipelas, and an infusion given in dysuria. (O'Sh.)

ORDER 79. PARONYCHIEÆ. (De Cand. iii. 365.)

Calyx of five (rarely 3—4) sepals, more or less concreted together, hence the calyx is five-partite, five-cleft or five-toothed; *petals* small, squamiform, appearing like sterile stamens, generally as many as the sepals, and inserted into the tube of the calyx, exactly opposite the lobes, even in the apetalous genera, equal in number to the sepals, or by abortion fewer; *filaments* distinct; *anthers* two-celled; *ovary* free; *styles* two or three; distinct, or more or less united; *fruit* dry, small, generally membranous, sometimes without valves, indehiscent, sometimes three-valved; *seeds* numerous, affixed to a central placenta, or solitary, suspended by a long cord which arises from the bottom of the cell; *albumen* farinaceous; *embryo* cylindrical, lateral, curved or surrounding the albumen; *radicle* turned towards the hilum. Branched *herbs* or *shrubs*, with *leaves* generally opposite, with or without scariose stipules; *flowers* sessile, small, entire.

ACHYRANTHES.

ACHYRANTHES LANATA. *Illecebrum lanatum.* Bengal.

Root demulcent, prescribed in strangury. (O'Sh.)

CORRIGIOLA. (De Cand. iii. 366)

*CORRIGIOLA LITTORALIS. (E. B. 668.) *Sand strapwort.*

Fl. whitish. July, August. Annual. Coast of Devon and Cornwall.

Herb cooling.

HERNIARIA. (De Cand. iii. 367.)

*HERNIARIA GLABRA. (E. B. 206.) *Glabrous rupture wort.*

Fl. green. June, August. Perennial. Rare. Lizard Point, Newmarket.

Rather saltish, astringent, diuretic; juice removes specks in the eye.

ILLECEBRUM. (De Cand. iii. 369.)

*ILLECEBRUM VERTICILLATUM. (E. B. 895.) *Whorled knot grass.*

Fl. white. July. Perennial. Marshy ground, Devon and Cornwall.

Refrigerant and astringent.

POLYCARPON. (De Cand. iii. 376.)

*POLYCARPON TETRAPHYLLUM. (E. B. 1031.) *Arenaria, Four-leaved allseed, Sea chickweed.*

Fl. greenish. May, September. Annual. Southern coasts.

Herb applied to whitlows.

SCLERANTHUS. (De Cand. iii. 378.)

*SCLERANTHUS ANNUUS. (E. B. 351.) *Annual knawel, German knot grass.*

Fl. greenish. July. Annual. Corn-fields.

Diuretic, astringent, the vapour arising from a decoction of it is used in the toothache.

*SCLERANTHUS PERENNIS. (E. B. 352.) *Perennial knawel.*

Fl. greenish. August, October. Perennial. Dry sandy places.

Coccus polonicus is found upon its roots.

TRIANTHEMA. (De Cand. iii. 351.)

TRIANTHEMA DECANDRA. India.

Root aperient. (O'Sh.)

TRIANTHEMA OBCORDATA.

Root cathartic, given in powder to the extent of two teaspoonsful twice daily with a little ginger. (O'Sh.)

ORDER 80. CRASSULACEÆ. (De Cand. iii. 381.)

Calyx consisting of many sepals, 3—20, more or less, concreted at the base, and therefore multipartite; *petals* equal in number to the sepals, alternate with them, and inserted into the base of the calyx, either free or concreted into a gamopetalous corolla; *stamens* inserted with the petals, either equal in number to, and alternate with, them, or double their number, those alternate with the petals longer and earlier, those opposite the petals shorter and later in arriving at perfection; *filaments* free, subulate; *anthers* oval, two-celled, dehiscing by a double chink; *nectariferous squamæ* at the base of the carpels solitary; *carpels* as many as the petals, and opposite to them, verticillated about an ideal axis, free, one-celled, dehiscing by a longitudinal chink at the inner angle; *seeds* fixed in a double row to the inner angle of the carpel; *albumen* thin, fleshy; *embryo* straight; *radicle* directed to the hilum. Succulent *herbs* or *shrubs*, with entire or pinnatifid *leaves* without stipules; *flowers* usually in cymes, sessile, often arranged unilaterally along the divisions of the cymes.

The thick juicy leaves are used outwardly as cooling and astringent applications; many of them contain malate of lime.

SEDUM. (De Cand. iii. 401.)

*SEDUM ACRE. (E. B. 839.) *Illecebra, Sedum minimum, Stonecrop, Wall pepper.*

Fl. yellow. June. Perennial. Walls, rocks, and sandy ground.

Emetic, cathartic, detersive, used in cancers and scrofula; antiscorbutic; externally rubefacient. (G.) Leaves acrid. This plant has been recommended in cancerous cases, and also in epilepsy. (L.)

*SEDUM ALBUM. (E. B. 1578.) *Sedum minus, Lesser house-leek, Prick madam, White stonecrop.*

Fl. white. July. Perennial. Rocks in Somersetshire.

Cooling and astringent; used in salads.

SEDUM ANACAMPSEROS. *Evergreen lesser house-leek.* South of France, &c.

SEDUM CEPÆA. *Annual white house-leek.* South of Europe.

Equally cooling, astringent, and diuretic.

*SEDUM RHODIOLA. (E. B. 508.) *Rhodiola rosea, Rhodia radix, Rose root.*

Fl. yellow. June. Perennial. Wet rocks on high mountains.

Root cephalic, astringent.

*SEDUM TELEPHIUM. (E. B. 1319.) *Crassula, Fabaria telephium, Livelong orpine.*

Fl. purple. July. Perennial. Borders of fields and stony hedges.

Astringent, easing pain in fresh wounds or in old ulcers, eaten as a potherb, leaves a slight but disagreeable irritation in the throat. (G.) Refrigerant and slightly astringent; leaves boiled in milk are commended in diarrhœa. (L.)

SEMPERVIVUM. (De Cand. iii. 411.)

*SEMPERVIVUM TECTORUM. (E. B. 1320.) *Sedum majus, Sempervivum, Common great house-leek.*

Fl. red. July. Perennial. Housetops and on walls.

Cooling, astringent, used externally to corns. (G.) The leaves are cooling when applied externally and frequently renewed; they possess, moreover, an astringent property, which is rather salutary in many cases; the dispensatory describes a beautiful, white, highly volatile coagulum, formed of the filtrated juice of these leaves with an equal quantity of spirits of wine. (L. ex Smith.)

UMBILICUS. (De Cand. iii. 399.)

*UMBILICUS PENDULINUS. (E. B. 322.) *Cotyledon umbilicus, Umbilicus veneris, Navel wort, Wall penny wort.*

Fl. yellowish green. June, August. Perennial. Rocks and walls.

Refreshing, detersive, cooling, very diuretic, useful in inflammations of the skin.

ORDER 81. FICOIDEÆ. (De Cand. iii. 415.)

Sepals definite, varying from 4—8, usually five, more or less combined at the base, either distinct from the ovary, or adherent to it, equal or unequal, with a quincuncial or valvate æstivation; *petals* sometimes wanting when the calyx is petaloid within, or numerous, inserted into the calyx, in many rows, opening beneath bright sunshine; *stamens* arising from the calyx, indefinite, free; *anthers* oblong, incumbent; *ovary* free or adnate to the calyx, many-celled; *stigmas* numerous; *capsule* either naked or surrounded by the fleshy calyx, many or five-celled, opening in a stellate manner at the apex; *seeds* numerous, very rarely solitary, fixed to the inner angle of the cells; *embryo* straight, curved, or spiral. Shrubby or herbaceous plants, with succulent, opposite, simple *leaves;* and usually terminal *flowers.*

MESEMBRYANTHEMUM. (De Cand. iii. 415.)

MESEMBRYANTHEMUM COPTICUM. Egypt.

Burned for barilla.

MESEMBRYANTHEMUM CRYSTALLINUM. *Ice plant.* Cape of Good Hope.

Contains acetate of potash; like the other species of this genus it is very mucilaginous, and useful in inflammatory and bilious fevers.

MESEMBRYANTHEMUM EDULE. Cape of Good Hope.

Esculent.

MESEMBRYANTHEMUM NODIFLORUM. Egypt.

Used in the preparation of morocco leather and burned for barilla.

REAUMURIA. (De Cand. iii. 456.)

REAUMURIA VERMICULATA. Sicily, Barbary, Egypt.

Exudes common salt mixed with saltpetre.

SESUVIUM. (De Cand. iii. 453.)

SESUVIUM PORTULACASTRUM. Mexico, Senegal, &c.

Used as a potherb.

TETRAGONIA. (De Cand. iii. 451.)

TETRAGONIA EXPANSA. *Diemdovia tetragonoides.* New Zealand, Japan.

Antiscorbutic, cooling, used as a potherb.

ORDER 82. CACTEÆ. (De Cand. iii. 457.)

Calyx consisting of numerous sepals, usually indefinite in number, and confounded with the petals, either crowning the ovary, or covering its whole surface; *petals* numerous, usually indefinite, arising from the orifice of the calyx, sometimes irregular; *stamens* numerous, indefinite, more or less cohering with the petals and sepals; *filaments* long, filiform; *anthers* ovate, versatile, bilocular; *ovary* obovate, fleshy, one-celled, with many ovules arranged upon a series of parietal placentæ, equal in number to the lobes of the stigma; *style* filiform; *stigmas* numerous, in some aggregate, in others spreading; *fruit* succulent, one-celled, many-seeded, either smooth or covered with scales, scars, or tubercles; *seeds* at first parietal, when ripe, having lost their adhesion, nestling in the pulp of the fruit, ovate or obovate, without albumen; *embryo* either straight, curved, or spiral, with a short thick radicle; *cotyledons* flat, thick, foliaceous, sometimes almost obsolete in the leafless species. Succulent shrubs varying greatly in form; *stems* usually angular, two-edged, or foliaceous; *leaves* almost always wanting, when present fleshy, smooth and entire, or spine-like; *flowers* either showy or minute, usually lasting only one day or night, always sessile.

OPUNTIA. (De Cand. iii. 471.)

OPUNTIA COCCINILLIFERA. *Cactus coccinillifera.* Warm parts of America.

The food of the grana fina cochineal.

OPUNTIA FICUS INDICA. *Cactus ficus indica.* South America.

The food of the grana sylvestria.

OPUNTIA VULGARIS. *Cactus opuntia, Indian fig, Prickly pear.* Southern parts of North America.

Fruit sweetish, diuretic; plants very cooling; juice contains a red colouring principle, which colours the urine of those that eat the fruit.

ORDER 83.—GROSSULARIEÆ. (De Cand. iii. 477.)

Limb of the *calyx* superior, 4—5 partite, regular, coloured; *petals* 5—4, inserted into the throat of the calyx, alternating with its segments, equal; *stamens* 4—5, very rarely 6, inserted between the petals on the calyx, all of equal size; *filaments* conical, or cylindrical, free; *anthers* two-celled, dehiscing longitudinally and internally, (in some varieties of Ribes rubrum transversely and laterally); *ovary* one-celled; *placentæ* two, opposite, parietal; *ovules* abundant; *style* one, 2—3—4 cleft; *fruit* succulent, subglobose, one-celled, crowned with the persistent calyx; *seeds* numerous, suspended by long filiform cords; outer integuments gelatinous or membranaceous, inner one a thin membrane closely adherent to the albumen; *albumen* horny; *embryo* minute, straight, placed in the narrow extremity of the seed; *radicle* obtuse. Prickly or unarmed *shrubs*, with alternate, lobed, and incised *leaves*.

Fruit eatable, acidulous, and cooling.

RIBES. (De Cand. iii. 477.)

RIBES ALBINERVUM. North America.

RIBES ALPINUM. (E. B. 704.) *Tasteless mountain currant.*

Fl. yellowish. May. Small shrub. Woods, Yorkshire and Scotland.

RIBES FRAGRANS. Siberia.

RIBES MACROBOTRYS. Woods on the Andes.

RIBES PUNCTATUM. Peru.

RIBES VISCOSUM. Chili.

Fruits eaten.

*RIBES NIGRUM. (E. B. 1291.) *Black currants, Quinsey berries.*

Fl. greenish, tipped with purple externally. May. Small shrub. Wood and river sides; also cultivated.

Odour similar to that of bugs; leaves in infusion aperitive, diuretic, used in gargles; young leaves substituted for tea; fruit aperitive, used in calculous affections; the juice boiled made into wine. (G.) Fruit, leaves, and wood, tonic and stimulant; a juice prepared from the fruit is used in domestic medicine against catarrhs. (L.)

*RIBES RUBRUM. (E. B. 1289.) *Ribesia, Ribes, Red and white currants.*

Fl. greenish. May. Small shrub. Alpine woods in north of England and Scotland.

There are two varieties cultivated.

β. R. hortense, Red currant.

γ. R. album, White currant.

Red currants, *Garnet berries*, acid, cooling; juice of the fruit, with sugar, drank as lemonade, or orgeat, and made into wine. *White currants*, fruit less acid; juice made into wine. (G.) Juice of the fruit refrigerant, very grateful to the parched palates of persons suffering from fever. (L.)

RIBES TRISTE. Siberia.

Berry black, used to colour wines.

*RIBES UVA CRISPA. *Ribes grossularia, Common gooseberry.*

Fl. pale purple. April, May. Small shrub. Hedges and thickets. A doubtful native.

Don, in his *Syst. Gard.* 3, p. 179, enumerates nearly two hundred varieties of cultivated gooseberries.

Berries used as a sauce for mackerel and other fish, astringent, but when very ripe laxative; make wine and vinegar; seeds, washed and roasted, substituted for coffee.

ORDER 84.—SAXIFRAGACEÆ. (De Cand. iv. 1.)

Sepals generally five, (rarely 3—7,) more or less united at the base; tube either more or less adnate to the ovary, or free; limb toothed or lobed, generally persistent; *petals* as many as the sepals, inserted into the tube of the calyx, alternating with its lobes, deciduous or persistent, rarely wanting; *stamens* inserted on the calyx, either equal in number to, and alternate with, the petals, or double their number, half being opposite to, and half alternate with, the petals; *filament* one, subulate; *anthers* ovate, bilocular; *ovary* composed generally of two carpels, rarely of 3 or 5, concrete; *styles* as many as the carpels, therefore generally two, either distinct from the base, or more or less concrete, terminated by a capitate or a clavate stigma; *fruit* two-celled, dehiscing either by an opening from the base to the apex, or by one between the styles from the apex to the base; *seeds* minute, numerous; *albumen* fleshy; *embryo* small; *radicle* short, turned towards the hilum; *cotyledons* short, ovate. *Herbs* or *shrubs.*

CHRYSOSPLENIUM. (De Cand. iv. 48.)

*CHRYSOSPLENIUM ALTERNIFOLIUM. (E. B. 54.) *Saxifraga aurea, Golden saxifrage.*

Fl. yellow. March, April. Perennial. Moist places among rocks, in north of England.

*CHRYSOSPLENIUM OPPOSITIFOLIUM. (E. B. 490.) *Common golden saxifrage.*

Fl. yellow. May, June. Perennial. Sides of rivulets and springs.

Aperitive, diuretic, anti-asthmatic and pectoral.

HEUCHERA. (De Cand. iii. 51.)

HEUCHERA AMERICANA. North America.

Root, *Alum root, Heuchera, P. U. S.*, astringent; used externally in cancer. (G.) Root a powerful astringent. (L.)

SAXIFRAGA. (De Cand. iv. 17.)

SAXIFRAGA COTYLEDON. *Narrow leaved saxifrage.* North Europe.

*SAXIFRAGA GEUM. (E. B. 1561.) *Kidney-shaped saxifrage.*

Fl. cream-coloured, spotless. June. Perennial. Ireland.

*SAXIFRAGA GRANULATA. (E. B. 500.) *S. alba. White meadow saxifrage.*

Fl. white, large. May, June. Perennial. Hedge banks, &c.

*SAXIFRAGA TRIDACTYLITES. (E. B. 501.) *Paronychia, Rue leaved whitlow grass, Three leaved saxifrage.*

Fl. white. May, June. Annual. On walls, common.

These, and most others of this genus, are aperitive, diuretic, useful in jaundice, obstructions, and scrofula. (G.)

WEINMANNIA. (De Cand. iv. 8.)

WEINMANNIA? *Red tan.*

Bark astringent, frequently mixed with that of the Loxa tree, or Peruvian bark. (G.)

ORDER 85.—UMBELLIFERÆ. (De Cand. iv. 55.)

Calyx superior, adherent to the ovary, either entire, five-toothed, or obsolete; *petals* five, inserted on the top of the tube of the calyx, alternate with its lobes, sometimes entire, sometimes emarginate or bifid, usually inflexed at the point, involute, imbricate, rarely valvate in æstivation; *stamens* five, alternate with the petals, and inserted with them on the calyx, replicate in æstivation; *anthers* ovate, bilocular; *ovary* inferior, two-celled; *styles* two, generally persistent, thickened more or less at the base into a fleshy disk or stylopodia; *fruit* (called a diakenium or cremocarp) consisting of two mericarps or carpels, separable from a common axis to which they adhere by their face, (the commissure,) each carpel traversed by five nerves or ridges, which are called primary, and occasionally with four alternate ridges, which are named secondary, the ridges are separated by interstices or channels, beneath which are often situated, in the substance of the pericarp, longitudinal canals or vittæ, containing a gummy, resinous, aromatic juice; *seed* solitary in the carpel, pendulous, usually adhering firmly to the pericarp; *albumen* large, fleshy, somewhat horny; *embryo* pendulous, at the base of the albumen; *radicle* superior. Herbaceous *plants*, with fistular, furrowed stems; *leaves* usually divided, sometimes simple, sheathing at the base; *flowers* in umbels, white, pink, yellow, or blue, generally surrounded by an involucre.

ÆGOPODIUM. (De Cand. iv. 114.)

*ÆGOPODIUM PODAGRARIA. (E. B. 940.) *Ash weed, Gout wort, Herb gerande.*

Fl. white, with purple anthers. May, June. Perennial. Gardens and wet places.

Root and herbs used in the gout; young leaves used in salads.

ÆTHUSA. (De Cand. iv. 141.)

*ÆTHUSA CYNAPIUM. (E. B. 1192.) *Cicutaria fatua, Fool's parsley, Lesser hemlock.*

Fl. white. June, August. Annual. Cultivated ground, very common.

Poisonous, liable to be mistaken for parsley, but is inodorous and insipid. (G.) The leaves are poisonous, producing nausea, vomiting, headache, giddiness, drowsiness, spasmodic pain, numbness, &c.; they are dark in colour, and nauseous in smell, which ought to prevent the mistaking of this plant for common parsley. (L.)

AMMI. (De Cand. iv. 112.)

AMMI MAJUS. *A. vulgare, Common bishop's weed.* Middle and south of Europe.

Fruit sold for that of Ammi verum.

AMMI VISNAGA. *Daucus sylvestris, D. visnaga, Visnaga daucoides, Wild carrot.* South of Europe.

Fruit diuretic, antipleuritic; rays of the umbel *Spanish toothpicks.*

ANETHUM. (De Cand. iv. 185.)

ANETHUM GRAVEOLENS. *Anethum, Dill.* South of Europe.

Fruit discussive, galactopoietic, stopping vomiting and the hiccough; leaves ripen tumours. (G.) Fruit carminative and stimulant, taken with the food may be regarded as condimentary; it is used in the colic of children to relieve hiccough; it has also been supposed to promote the secretion of milk;

Aqua anethi is chiefly employed; the fruit also yields by distillation a volatile oil. (L.)

ANETHUM SEGETUM. *Fœniculum dulce, Sweet fennel.* South of Europe.

Blanched stem used as a potherb; fruit carminative, used in soups; imported from Italy. (G.) See Fœniculum.

ANETHUM SOWA. *Womum.* East Indies.

Fruit carminative. (G.) Fruit aromatic and carminative; used in the curries of the East Indies. (L.)

ANGELICA. (De Cand. iv. 167.)

ANGELICA ATROPURPUREA. *American angelica, Angelica, P. U. S.* North America. Cordial, aphrodisiac.

ANGELICA NEMOROSA. Naples.

Root acrid, used as a remedy for the itch. (O'Sh.)

*ANGELICA SYLVESTRIS. (E. B. 1128.) *Wild angelica.*

Fl. white. July. Perennial. Moist places in woods and near rivulets.

Cordial, aphrodisiac.

ANTHRISCUS. (De Cand. iv. 222.)

*ANTHRISCUS CEREFOLIUM. (E. B. 1268.) *Chærophyllum sativum, Scandix cerefolium, Garden chervil.*

Fl. white. July. Annual. About gardens.

A common potherb, with eatable roots. (L.) Very resolving, diuretic, lithontriptic. (G.)

ANTHRISCUS CICUTARIA. *Chærophyllum cicutaria, Hemlock chervil.* The Alps.

Roots poisonous as well as the leaves.

*ANTHRISCUS SYLVESTRIS. (E. B. 752.) *Chærophyllum sylvestre, Cicutaria vulgaris, Cow weed, Wild cicily.*

Fl. white. April, June. Perennial. Hedges, &c.; very common.

Strong smelling, acrid, diuretic, dyes woollen yellow and green. (G.) Recommended by Osbeck, in 1811, in the form of an extract in syphilitic complaints. Reputed to be similar in its effects to hemlock, only rather less narcotic. (*Herba cicutariæ, officin.*) (L.)

*ANTHRISCUS VULGARIS. (E. B. 818.) *Scandix anthriscus, Common beaked parsley, Rough chervil.*

Fl. white. May, June. Annual. Waste places, common.

Deleterious. Some Dutch soldiers, who gathered it by mistake for common chervil, were poisoned by the soup into which it was put. (L. *ex* Burnett.)

APIUM. (De Cand. iv. 100.)

*APIUM GRAVEOLENS. *Apium, Eleoselinum, Celery, Smallage.*

Fl. greenish-white. August, September. Perennial. Marshy places, especially near the sea.

Root opening, diuretic, used in jaundice and the gravel; fruit more active; blanched stalks eaten in salads. (G.) When wild, growing in wet meadows and in ditches, it is acrid and poisonous; when cultivated in dry ground, and partially blanched, it is the celery well known as a salad. (L.)

ARCHANGELICA. (De Cand. iv. 169.)

*ARCHANGELICA OFFICINALIS. (E. B. 2561.) *Angelica archangelica, Garden angelica.*

Fl. white. June, September. Biennial. Banks of Thames.

Root stomachic, carminative, aperitive, diaphoretic, useful in typhus fever; fruit aromatic. (G.) Root fragrant, bitterish, pungent, sweet when first tasted, but leaving a glowing heat in the mouth; the Laplanders extol it not only as food, but as medicine. In coughs, hoarseness, and other pectoral disorders, they eat the stalks roasted in hot ashes; they also boil the tender flowers in milk, till it attains the consistence of an extract, which they use to promote perspiration in catarrhal fevers, and to strengthen the stomach and bowels in diarrhœa. The leaves, seeds, and root, are certainly good aromatic tonics. (L. *ex* S. & C.) *Candied angelica, Caules angelicæ conditi;* the fresh stalks are boiled in water to take away the bitterness, and some of the strong scent, then put into syrup, boiled to a candy height, taken out and dried; cordial, aphrodisiac. (G.)

ARTEDIA. (De Cand. iv. 208.)

ARTEDIA SQUAMATA. *Gingidium, Oriental picktooth.*

Leaves diuretic, stomachic, used as a potherb, or eaten raw; rays of the umbel used as toothpicks.

ASTRANTIA. (De Cand. iv. 86.)

ASTRANTIA MAJOR. *Black mastor wort.*

Roots acrid and purgative. (L.)

ASTRANTIA MINOR.

Roots of this and of the former used in scirrhus of the spleen and mania. (G.)

ATHAMANTA. (De Cand. iv. 154.)

ATHAMANTA CRETENSIS. *Daucus creticus.* Middle and south of Europe.

The fruits are aromatic, with a warm, agreeable flavour, and a smell like that of marjoram; they were used in the preparation of Diaphœnix, Venice treacle, and compound syrup of wormwood. (*Semina dauci cretici, officin.*) (L.) Fruit odorous, carminative, diuretic, antihysteric, and nervine. (G.)

Athamanta mathioli. *Seseli, Turbith?* Alps of Carinthia and Carniola.

Roots acrid, and purge upwards and downwards very violently.

Bubon. (De Cand. iv. 184.)

Bubon galbanum. Cape of Good Hope.

Yields Galbanum. (G.) Valde dubium ex hac stripe galbanum hauriri. (De Cand.) Vide Galbanum.

Bupleurum. (De Cand. iv. 127.)

Bupleurum fruticosum. *Seseli æthiopicum, Shrubby hartwort.* South of Europe.

Fruit carminative, very acrid and odorous.

Bupleurum perfoliatum. *Perfoliata, Thoroughwax.*

Vulnerary; used externally in tumours.

***Bupleurum rotundifolium.** (E. B. 99.) *Auricula leporis, Common hare's ear, Thoroughwax.*

Fl. yellow. July. Annual. Corn-fields on chalky soil.

This, and other species of the same genus, are aperitive, discussive, and diuretic.

Cachrys. (De Cand. iv. 236)

Cachrys libanotis. Sicily, north of Africa.

Root very heating and detersive; used externally in piles.

Cachrys odontalgica. Siberia, The Crimea, &c.

Used in toothache. (G.) The root excites salivation, and is said to cure pain in the teeth. (L.)

Carum. (De Cand. iv. 114.)

Carum bulbocastanum. *Bunium bulbocastanum.* Various parts of Europe.

Tuber, *Earth nut, Kipper nut, Pig nut, Haugh nut*, very nourishing, stimulant, useful in bloody urine, and spitting of blood. (G.)

***Carum carui.** (E. B. 1503.) *Carvi carum, Caraway.*

Fl. white. June. Perennial. Meadows and pastures.

Fruit, *Caraway seeds, carui semina*, stomachic, carminative; root sweet, nourishing, and better eating than parsnips. (G.) Similar in action to dill and anise; used in the flatulent colic of children; the fruit or the oil obtained from it enters as an adjuvant or corrective into various officinal preparations, as the confection of opium, of rue, and of scammony, the compound tincture of cardamoms and of senna. (L. *ex* Pereira.)

Carum nigrum. (L. Med. Bot. 38.)

Called *Zeera seeah*, is imported from Kunawur into India as a carminative. (L. *ex* Royle.)

Caucalis. (De Cand. iv. 216.)

***Caucalis daucoides.** (E. B. 197.) *Fine leaved bastard parsley, Small bur parsley.*

Fl. white, tipped with red. June. Annual. Corn-fields on a chalky soil.

Diuretic.

Caucalis leptophylla. Middle and south of Europe.

The same.

Chærophyllum. (De Cand. iv. 224.)

*Chærophyllum aromaticum. (E. B. 2636.) *Broad leaved chervil, Musk chervil.*

Fl. white. June. Perennial. Near Forfar, Scotland.

Very resolving, diuretic, lithontriptic.

Cicuta. (De Cand. iv. 99.)

Cicuta maculata. *Snake weed.* United States.

A most dangerous poison resides in the roots; a drachm of the fresh root has killed a boy in an hour and a half, and in America, fatal accidents arising from its being mistaken for other apiaceous plants, are not uncommon; has been used as a substitute for conium, with similar effect, except that it is more energetic. (L.)

*Cicuta virosa. (E. B. 479.) *Suim crucæfolia, Cow bean, Long leaved water parsnip, Water hemlock.*

Fl. white. July, August. Perennial. Margin of watery places, not common.

Acrid, poisonous, especially the roots; emetic, and acts upon the nervous system; used externally, powerfully resolvent, anodyne, and used in scrophulous and scirrhous tumours, and in inflammation of the penis; juices yellow, poisonous. (G.) A dangerous poison, producing effects similar to those of hydrocyanic acid; it appears to cause true tetanic convulsions in frequent paroxysms, and death on the third day. (Christison.) Haller considered it as the conium of the Greeks; it appears to be fatal to cattle. (L.)

Conium. (De Cand. iv. 242.)

*Conium maculatum. (E. B. 1191.) *Cicuta*, (κίονειον Dioscorid.) *Common hemlock.*

Fl. white. June, July. Biennial. Waste places, very common.

Very poisonous in warm countries, but less active in cold ones, powerfully narcotic; used in many obstinate disorders, as schirrous cancer, chronic rheumatism, ill-conditioned ulcers, and glandular tumours; dose of the dried leaves, *Cicutæ folia, Conii folia*, in powder gr. j., gradually increased to ℈j., every four hours, to be exhibited with caution, especially when a fresh parcel of the powder is used. (G.) A powerfully narcotic acrid plant, occasioning stupor, delirium, palsy, and asphyxia; some authors state that it produces death with the most dreadful convulsions, but this is at variance with the accounts of Drs. Christison and Pereira. It is recommended in cancerous and scrofulous disorders, syphilis, dropsy, epilepsy, as an anodyne, &c. &c.; it is said by Aretæus to be anti-aphrodisiac, by Störck and Bergius to be the reverse; the leaves are the parts usually employed, but the preparations from them are frequently inert; this may arise in part from the manner of preparing them, or from the time when they have been collected; Fothergill long since stated what is quite conformable to theory, that conium was to be obtained in its most active state, when the flowers are just past, the fruit forming, and the plant inclining to yellow, and that the quality of that collected when the herbage is strong and succulent, is very inferior. (*Fothergill's works*, 266.) Drs. Pereira and Christison recommend an alcoholic tincture of the bruised ripe fruit, instead of the leaves. (L.)

CORIANDRUM. (De Cand. iv. 250.)

*CORIANDRUM SATIVUM. (E. B. 67.) *Coriander.*

Fl. white. June. Annual. About Ipswich and in Essex.

Herb eaten as a salad, too frequently occasions fatuity. (G.) Fruit carminative and aromatic; Cullen considered it as more powerfully correcting the odour and taste of senna, than any other aromatic. (L.)

CRITHMUM. (De Cand. iv. 164.)

*CRITHMUM MARITIMUM. (E. B. 819.) *Crithmum, Herba sancti Petri, Fœniculum maritimum, Samphire.*

Fl. greenish-white. August, September. Perennial. Sea shore.

Excites the appetite; *Pickled samphire*, used for sauce.

CUMINUM. (De Cand. iv. 201.)

CUMINUM CYMINUM. *Cyminum cumin.* Upper Egypt.

Fruits carminative, as in other plants of the order, but the smell disagreeable; chiefly used in veterinary surgery; combined with resin they make a warm stimulating plaster. (L.)

DAUCUS. (De Cand. iv. 209.)

*DAUCUS CAROTA. (E. B. 1174.) *D. nostras, D. vulgaris, Common carrot.*

Fl. white, with a dark purple abortive floret in the centre. July. Biennial. Fields, very common.

Roots, *Dauci radix*, saccharine, alimentary; used externally to carcinomatous and foul ulcers; a sugar is made from them. (G.) A poultice for correcting the fœtid discharge, allaying the pain, and changing the action of ill-conditioned, phagedenic, sloughing, and cancerous ulcers, is prepared from the root; fruit carminative, but supposed to act more particularly on the urinary organs. (L. *ex* Pereira.)

DAUCUS GINGIDIUM. Rocky shores of Corsica.
Properties same as

DAUCUS GUMMIFER. Sea coast of Sicily.
Yields one sort of *Opopanax*. (G.) The roots yield the *Bdellium siculum* of the old Pharmacopœias, according to Boccone; it has a bitter balsamic taste, and a weak but unpleasant odour.

N.B. De Candolle considers the plant thus called by Lamarck the same as our British Daucus maritimus, and reduces it as a synonym to the D. hispanicus of Gouan; he then refers Boccone's Bdellium carrot to D. gingidium, but Gussone, the greatest of all authorities concerning Sicilian plants, retains D. gummifer as a distinct species. (L.)

DOREMA. (Don in Linn. Trans. xvi. 601.)

DOREMA AMMONIACUM. Persia.
Stem and roots yield a great abundance of the fœtid gum resin *Ammoniacum;* its action is similar to that of asafœtida; it is chiefly employed as a discutient and expectorant. (L.) Also applied externally as a warm and stimulating plaster. (O'Sh.)

ERYNGIUM. (De Cand. iv. 87.)

ERYNGIUM AQUATICUM. *Button snake weed.* North America.

Root, *Eryngium, P. U. S.*

*ERYNGIUM CAMPESTRE. (E. B. 718.) *Eryngo.* Middle and south of Europe.

Fl. blue, or yellowish. July, August. Perennial. Near Plymouth and Daventry; very rare.

Roots aphrodisiac, diuretic, sudorific, may be used for contrayerva. (G.) The root is sweet, aromatic, and tonic; Boerhaave reckons it as the first of aperient diuretic roots; it has been recommended in gonorrhœa, suppression of the menses, and visceral obstructions, particularly of the gall-bladder and liver; it has also the credit of being a decided aphrodisiac; a good deal of candied root is sold. (L.) *Candied eryngo, Radix eryngii condita;* roots slit, washed in cold water, and then put into syrup. (G.)

ERYNGIUM FŒTIDUM. *Stinking weed.* America.

Leaves in infusion anti-hysteric, either internally, or in clysters. (G.)

*ERYNGIUM MARITIMUM. *Sea eryngo.* or *Sea holly.*

Fl. blue. July, August. Perennial. Sea shore.

Shoots boiled eaten as asparagus.

ERYNGIUM TRICUSPIDATUM. *Three leaved eryngo.* South of Europe.

These two have similar properties to E. campestre, but in a less degree.

FERULA. (De Cand. iv. 171.)

FERULA ASAFŒTIDA. Persia.

Old roots yield asafœtida; young roots roasted and eaten; leaves eaten as greens; some fruits found in Sagapenum produced an unknown fecula. (G.) A fœtid, alliaceous, gum resin, is obtained by slicing the fleshy perennial roots; it is acrid, bitter, and antispasmodic. This is the most genuine asafœtida plant, which is hardly known to modern botanists; probably the same substance is yielded by other species of Ferula; Professor Royle says he obtained two different fruits from the bazaars in India; see also Ferula persica and Ferula hooshee; it has also been conjectured to have produced the Silphium, or Laser of the ancients, but I think on unsatisfactory evidence. (L.)

FERULA COMMUNIS. *Ferula, Fennel giant.* South of Europe.

Fruit carminative; green pith of the stem used in spitting of blood.

FERULA FERULAGO. *Ferula, F. galbanifera, F. nodiflora.* Coasts of the Mediterranean.

Fruit found in Galbanum produced this plant. (G.) Yields abundantly a gum resinous secretion, and was thought to produce Galbanum. See Galbanum officinale. (L.)

FERULA HOOSHEE. (L. Med. Bot. 46.) Beloochistan.

Resembles F. asafœtida in size and appearance, and has a gum, but it is not collected, and resembles the opopanax of the European shops. (*Mrs. Macneil's Letter, Mar.* 1833.) Referred to in Professor Royle's Illustrations, p. 231, as resembling opopanax, not, however, in the structure of the fruit, but in the quality of the produce. (L.)

FERULA ORIENTALIS. *F. ammonifera, Fashook,* 'Αμμωνιακόν, (*the drug,*) 'Αγασυλλις, (*the plant,*) *Dioscorid.* Asia Minor, Greece.

What is supposed to be this plant yields in the state of Morocco a gum resin similar to Ammoniacum, whence it has been thought to be really the origin of that substance, and with good reason, so far as the drug of Dioscorides is concerned, for certainly there is no ground whatever for regarding ammoniacum a corruption of armeniacum, as Professor Don supposes; Dioscorides expressly points to the meaning of the word, when he says, γεννâται δέ ἐν Λιβυη κατα Ἄμμωνα, "It is produced in Libya, in the district of Ammon." Mr. Don seems, however, to have produced evidence of the ammoniacum of the shops being obtained from a Persian plant. (*See* Dorema.) (L.)

FERULA PERSICA. *F. sagapenum.* Persia.

Also said to yield gum ammoniacum. (G.) This plant is said by Willdenow, Sprengel, and Fée, to produce sagapenum, but without sufficient evidence; Michaux sent its fruit from Persia as that of asafœtida; Nees and Ebermaier regard it as one of the plants yielding the latter substance, and probably with justice. (L.)

FERULA TINGITANA. Barbary.

Sprengel considers this as the *Silphion* of the ancients, from which the *Laser cyreniacum*, or *Asa dulces*, was produced; but Viviani asserts that F. tingitana does not grow in the country of Cyrene, but only occurs more to the westward. (*See* Thapsia.) (L.)

FŒNICULUM. (De Cand. iv. 142.)

FŒNICULUM DULCE. *Sweet fennel.* Italy, Portugal, &c.

Considered by the Italians as only a variety of the common fennel; oil of sweet fennel is obtained from the fruit. (L.) (*Vide* Anethum segetum.)

FŒNICULUM PANMORIUM. *Anethum panmori.* East Indies.

Used medicinally in India as a warm aromatic and carminative, in flatulent colic and dyspepsia. (L.)

*FŒNICULUM VULGARE. (E. B. 1208.) *Anethum fœniculum, Meum fœniculum, Common fennel.*

Fl. yellow. July, August. Perennial. Chalky cliffs near the sea.

Fruit aromatic, hot, carminative; roots opening; leaves diuretic; used as seasoning to fish. (G.) Oil of wild fennel is obtained from the fruit. (L.)

GALBANUM. (Don in Linn. Trans. xvi. 603.)

GALBANUM OFFICINALE. *Barzud*, (Arab.) *Biruja*, (Hindoost.) the drug; *Kinneh* and *Naful* the plant, according to Royle. Χαλβάνη. (Dioscorid.) Syria, according to Dioscorid.

The gum resin *Galbanum* is less powerful than asafœtida, but its action is of the same kind, and their uses the same; the drug comes from Smyrna and India. It would appear that the opinion of this drug being furnished by Bubon Galbanum or Ferula ferulago is unfounded. (L.)

HELOSCIADIUM. (De Cand. iv. 104.)

*HELOSCIADIUM NODIFLORUM. (E. B. 639.) *Sium nodiflorum, Creeping water parsnip, Procumbent marsh wort.*

Fl. white. July, August. Perennial. Sides of rivulets, &c.

Juice used in cutaneous diseases, dose for children three tea-spoonfuls twice a day, and for adults ʒiij. every morning.

HERACLEUM. (De Cand. iv. 191.)

HERACLEUM GUMMIFERUM.

Yields gum ammoniacum. (G.)

HERACLEUM GUMMIFERUM. (Wilden Enum. 312.) Supposed to be the same as H. pubescens. (De Cand. iv. 193.) Has been erroneously supposed to yield opopanax. (L.)

HERACLEUM LANATUM. *Master wort.* North America.

Root, *Heracleum, P. U. S.*, emollient.

HERACLEUM PANACES? and some other species are added to fermented liquors, and distilled by the northern nations.

*HERACLEUM SPHONDYLIUM. (E. B. 939.) *Sphondylium, Cow parsnip, Cow parsley.*

Fl. white, rayed. July. Biennial. Meadows and bushy places.

Root and leaves emollient; fruit a specific in hysteric spasms; juice renders the hair of the head curly; young shoots substituted for asparagus; exudes sugar. (G.) Rind and root acrid, and will ulcerate the skin on which they are applied; inside of the root eaten by the Kamschatdales; root contains sugar. (L.)

HYDROCOTYLE. (De Cand. iv. 59.)

*HYDROCOTYLE VULGARIS. (E. B. 751.) *Marsh Penny wort, White rot.*

Fl. often tinged with red. May, June. Perennial. Bogs and marshes.

Properties the same as those of Eryngium, which see.

IMPERATORIA. (De Cand. iv. 183.)

*IMPERATORIA OSTRUTHIUM. (E. B. 1380.) *Astrantia, Imperatoria, Master wort.*

Fl. white. Doubtful native. Banks of the Clyde.

Root very restorative after fatigue, formerly chewed by military officers and soldiers in forced marches, and other fatiguing duties. (G.) Root acrid and bitter, it is used as a masticatory in toothache, and many writers speak well of it as a febrifuge; Lango even affirms that it has cured agues which had resisted the influence of Peruvian bark. (L. ex Burnett.)

LAGOECIA. (De Cand. iv. 238.)

LAGOECIA CUMINOIDES. *Cuminum sylvestre, Wild cumin* Greece, Persia.

Fruit carminative.

LASERPITUM. (De Cand. iv. 204.)

LASERPITUM GLABRUM. *L. latifolium.* Mountains of Europe.

The root is gorged with a gum resinous juice, which is acrid, bitter, and even somewhat caustic; it is reckoned a violent purgative; the French call it *Turbith des Montagnes*, and *Faux Turbith*. (L. ex Fée.)

Laserpitum siler. *Seseli*, *Siler montanum*, *Hart wort.* Mountains in Middle and South of Europe.

The roots of this, and of some other species, are employed in scrofula, spitting of blood and piles. (G.)

Levisticum. (De Cand. iv. 164.)

Levisticum officinale. *Ligusticum levisticum*, *Lovage.* West of Germany, Transylvania.

Root, leaves, and fruit aromatic, stomachic, and diaphoretic; stem yields English opopanax.

Libanotis. (De Cand. iv. 150.)

***Libanotis vulgaris.** (E. B. 138.) *Athamanta libanotis*, *Gentiana nigra*, *Black gentian.*

Fl. white. August. Perennial. Chalky pastures. Rare. Diaphoretic, diuretic; used in calculus.

Meum. (De Cand. iv. 162.)

***Meum athamanticum.** (E. B. 2249.) *Æthusa meum*, *Athamanta meum*, *Meu*, *Meum*, *Baldmoney*, *Spignel.*

Fl. yellowish. June, July. Perennial. North of England.

Root gummy, resinous, carminative. (G.) The Μεον *ἀθαμαντικὸν* of Dioscorides; the roots are sweet and aromatic, something like carrot, and contain a small quantity of essential oil; they form an ingredient of Venice treacle. (Radix Mei, Officin.) (L.)

Meum mutellina. *Æthusa mutellina*, *Œnanthe purpurea*, *Phellandrium mutellina.* Sub-alpine meadows in middle of Europe.

Used like the last. (Radix Mutellinæ, Officin.) (L.)

Molopospermum. (De Cand. iv. 230.)

Molopospermum cicutarium. *Ligusticum peloponesiacum*, *Seseli peloponense*, *Great broad-leaved hemlock.* Pyrenees, Alps, &c.

Root and fruit used in nervous diseases.

Myrrhis. (De Cand. iv. 231.)

***Myrrhis odorata.** (E. B. 697.) *Scandix odorata*, *Sweet cicily.*

Fl. white. May, June. Perennial. Pastures in mountainous parts of England and Scotland.

Very resolving, diuretic, lithontriptic. (G.)

Œnanthe. (De Cand. iv. 136.)

***Œnanthe crocata** (E. B. 2313.) *Œ. cicutæfacia*, *Hemlock drop wort*, *Hemlock water drop.*

Fl. white. July. Perennial. Watery places.

Acrid, poisonous, especially the roots, emetic, and acts upon the nervous system; used externally is powerfully resolvent, anodyne, and used in scrofulous and scirrhous tumours, and in inflammations of the penis; juices yellow, poisonous. (G.) A dangerously poisonous plant, the cause of many fatal accidents; Dr. Christison considers it the most energetic of the narcotico-acrid apiaceæ; it is difficult to conceive how it should be mistaken for hemlock by the herb-gatherers, as Godefroi asserts; the roots are usually the parts eaten by those who fall victims to it, mistaking it for parsneps, ground nuts, or similar roots; it has been used in lepra and ichthyosis, and Dr. Hope found an infusion of the leaves useful in promoting the menstrual discharge. (L.)

*ŒNANTHE FISTULOSA. (E. B. 363.) *Common water dropwort.*

Fl. white. June, July. Perennial. Ditches and marshes.

*ŒNANTHE PHELLANDRIUM. (E. B. 684.) *Œ. aquatica, Phellandrium aquaticum, Fine-leaved water dropwort.*

Properties same as Œ. crocata, but less poisonous.

*ŒNANTHE PEUCIDANIFOLIA. (E. B. 348.) *Parsley water dropwort, Sulphur weed, Water dropwort.*

Fl. white. June. Perennial. Bogs and ditches in midland counties.

*ŒNANTHE PIMPINELLOIDES. (E. B. 347.) *Parsley water dropwort.*

Fl. white. July. Perennial. Salt marshes.

Roots used as potherbs. (G.)

This genus contains twenty species according to De Candolle, and Fée reckons them all dangerous poisons, notwithstanding that the fleshy tubercles of Œ. pimpinelloides and Œ. peucidanifolia have occasionally been eaten. (L.)

OPOPANAX. (De Cand. iv. 170.)

OPOPANAX CHIRONIUM. *Pastinaca opopanax, Ferula opopanax,* Πανακες ἡρακλέιον. (Dioscorid.) *Gum parsnep.* Dry hills, margins of fields, South of Europe.

Root yields by incision *opopanax.* (G.) A milky juice exudes from the root when wounded, and hardens into *opopanax,* a fetid gum resin similar in its effects to asafœtida, (L.), but much feebler. (O'Sh.)

PASTINACA. (De Cand. iv. 188.)

*PASTINACA SATIVA. (E. B. 556.) *P. hortensis, Parsnep.*

Fl. yellow. July, August. Biennial. Borders of fields and pastures in chalky soil.

Roots nutritive, but their strong smell renders them disagreeable to many; sugar and wine are made from them, fruit aromatic. (G.)

PETROSELINUM. (De Cand. iv. 102.)

*PETROSELINUM SATIVUM. (E .B. 2793.) *Apium petroselinum, P. vulgare, Parsley.*

Fl. greenish white. July. Biennial. On old walls, a doubtful native.

Root diuretic, leaves used as a seasoning to meat, resolve coagulated milk in the breasts, but supposed to produce epilepsy and inflammation of the eyes; fruit carminative. (G.) The leaves are a pleasant stimulating salad, they are diuretic, and are at once recognised by their agreeable smell; Burnett says the fruit is a deadly poison to parrots. (L.)

*PETROSELINUM SEGETUM. (E. B. 228.) *Sison segetum. Corn Hone-wort, Corn parsley.*

Fl. white or slightly reddish. August. Annual, Biennial. Moist fields on chalky soil.

Useful in indolent tumours.

PEUCEDANUM. (De Cand. iv. 176.)

*PEUCEDANUM OFFICINALE. (E. B. 176.) *Hog's fennel, Hore strange, Sulphur wort, Sulphur weed.*

Fl. yellow. July, September. Perennial. Salt marshes in Kent, Essex, and Sussex. Rare.

Root very diuretic, attenuant, expectorant, aperitive; wounded it exudes a gum resin. (G.) Juice of the root inspissated in the sun, or before the fire, is reputed antispasmodic and diuretic. (L.)

PEUCEDANUM OREOSELINUM. *Athamanta Oreoselinum.* Open hills in middle of Europe.

The leaves and stem (*Herba oreoselini, officin.*) are bitter and aromatic, as is the fruit, but in a higher degree; they were used as powerful stimulants of the intestinal canal, and are still esteemed in some countries. (L.)

PEUCEDANUM MONTANUM. *Selinum palustre, Mountain parsley.* Marshes and boggy meadows in the north and middle of Europe.

The root abounds in a white, bitter, fetid juice, which hardens into a brown acrid resin; the Russians employ it as ginger; a famous remedy in Courland in epilepsy. (L. ex Rust's *Krit repert* xii. 2, p. 281.)

PEUCEDANUM SYLVESTRE. *Selinum sylvestre, Milky parsley.* North and East of Europe.

Roots alexiterial.

PHYOSPERMUM. (De. Cand. iv. 246.)

*PHYOSPERMUM CORNUBIENSE. (E. B. 683.) *Ligusticum cornubiense, Cornish lovage.*

Fl. white. July. Perennial. Near Bodmin, Cornwall.

Root exudes a resin.

PIMPINELLA. (De Cand. iv. 119.)

PIMPINELLA ANISUM. *Anisum officinale, Sison anisum.* Ανισον. (Dioscorid.) *Anise.* Egypt, Isle of Scio, the Levant.

Fruit cephalic, stomachic, carminative, diuretic, and emmenagogue; our summers not being sufficiently warm to ripen the seeds, they are usually imported. (G.) The officinal preparations, especially the aqua anisi, are employed to relieve flatulence, colicky pains, especially of children; nurses sometimes take it to promote the secretion of milk; it has also been used in pulmonary affections; its effects are condimentary, stimulant, and carminative. (L. ex Pereira.)

*PIMPINELLA SAXIFRAGA. (E. B. 407.) *Common Burnet saxifrage.*

Fl. white or slightly reddish. July, August. Perennial. Dry pastures.

Root, chewed, relieves the toothache; fruit opening, detersive, and lithontriptic. (G.) Root astringent, used as a masticatory to relieve toothache, and in decoction to remove freckles. (L. ex Burnett.)

PIMPINELLA DISSECTA and P. MAGNA have similar properties.

PRANGOS. (De Cand. iv. 239.)

PRANGOS PABULARIA. *Fiturasulioon.* North of India.

Leaves dried and eaten by cattle as winter fodder, its effects heating, producing fatness quickly; destructive of the Fasciola hepatica in sheep. (L. ex Moorcroft.)

PTYCHOTIS. (De Cand. iv. 107.)

PTYCHOTIS ADJOWAN. *Adjowaen, Daucus copticus, Bubon copticum, Ligusticum adjowan.* India.

Fruit carminative, imported from the East Indies. (G.)

The fruit has an aromatic smell, and a warm pungent taste; one of the most useful and grateful of the umbelliferous tribe; an excellent remedy in flatulent colic; much used in India. (L. ex Roxb.)

PTYCHOTIS COPTICA. *Ammi copticum.* Egypt and Candia.

Has similar properties.

PTYCHOTIS HETEROPHYLLA. *Sesile saxifragum,* South of Europe.

Roots purgative, not so acrid as the Thapsiæ, or as Athamanta mathioli.

PTYCHOTIS INVOLUCRATA. India.

Used by Europeans in India as a substitute for parsley. (L. ex Royle.)

PTYCHOTIS SYLVESTRIS. India.

An Indian carminative. (L. ex Royle.)

SANICULA. (De Cand. iv. 84.)

*SANICULA EUROPÆA. (E. B. 98.) *Wood sanicle.*

Fl. white. May, June. Perennial. Woods and thickets.
Leaves vulnerary, cleansing.

SCANDIX. (De Cand. iv. 220.)

*SCANDIX PECTEN VENERIS. (E. B. 1397.) *Pecten veneris, Shepherd's needle, Venus' comb.*

Fl. white. May, June. Annual. Corn-fields.
Young shoots eaten raw or boiled.

SELINUM. (De Cand. iv. 165.)

SELINUM CARUIFOLIA. Europe.
Roots alexiterial.

SESELI. (De Cand. iv. 144.)

SESELI MONTANUM. *Bastard spignel.* Hills in France.
Roots purgative, not so acrid as the Thapsiæ, or as Athamanta mathioli.

SESELI LEUCOSPERMUM. *Athamanta leucospermum.* Pannonia.
Root resinous, aromatic.

SESELI HIPPOMARATHRUM. Alsatia, Germany.

SESELI TORTUOSUM. *French hart-wort.* South of France.
Seeds stomachic, aperitive; roots anti-asthmatic.

SILAUS. (De Cand. iv. 161.)

*SILAUS PRATENSIS. (E. B. 2142.) *Peucedanum silaus, Saxifraga vulgaris, Meadow pepper saxifrage.*

Fl. yellowish. July, September. Perennial. Pastures and meadows.
Root aperitive, used in calculous cases.

SISON. (De Cand. iv. 110.)

*SISON AMOMUM. (E. B. 954.) *Amomum vulgare, Common amomum, Bastard stone parsley, Hone wort.*

Fl. cream-coloured. August. Biennial. Moist ground on a chalky soil.

Fruit warm, aromatic, used in Venice treacle. (G.) Fruit pungent and aromatic, but has a nauseous smell of bugs when fresh; it formed the *Semen amomi* of the old apothecaries. (L.)

SIUM. (De Cand. iv. 124.)

*SIUM ANGUSTIFOLIUM. (E. B. 139.) *Berula angustifolia, Sium berula? Narrow-leaved water parsnep, Upright water parsnep.*

Fl. white. July, August. Perennial. Watery places.

*SIUM LATIFOLIUM. (E. B. 204.) *Pastinaca aquatica, Broad-leaved water parsnep, Great water parsnep.*

Fl. white. July, August. Perennial. Watery places.
Roots poisonous; leaves aperitive, diuretic, antiscorbutic. (G.)

Sium sisarum. *Sisarum, Skirret.* China, Japan, &c.
Root used as a potherb, stomachic, a specific against the bad effects of quicksilver; sugar is made from it.

Var. *β. Ninsi, Sium ninsi, Ninsi, Ninzen, Nin sing.* China and East Indian islands.
Alexiterial and aphrodisiac, and thought to lengthen life, frequently confounded with ginseng, as in the *Pharm. Lond.* 1720.

Smyrnium. (De Cand. iv. 242.)

*Smyrnium olusatrum. (E. B. 230.) *Hipposelinum, Smyrnium, Alexanders.*
Fl. yellowish green. May, June. Biennial. Waste grounds, among ruins near the sea.
Root and herb opening, emmenagogue. (G.) Leaves pleasantly aromatic; fruit stimulant and stomachic. (O'Sh.)

Thapsia. (De Cand. iv. 202.)

Thapsia asclepium. Apulea, Sicily.
Thapsia garganica. South of Europe.
Roots acrid, and purge upwards and downwards very violently. (G.)

The variety γ of the latter of these is found on the mountains of Cyrene, and is the T. silphion of Viviani. (Fl. Lybica, p. 17.) The *Laser cyrenaicum*, or *Asa dulces* of Cyrene, was a drug in high reputation among the ancients for its medicinal uses; it had miraculous powers assigned to it; to neutralise the effects of poison, to cure envenomed wounds, to restore sight to the blind, and youth to the aged, were only a part of its reputed properties; it was also reckoned antispasmodic, deobstruent, diuretic, &c. So great was its reputation, that the princes of Cyrene caused it to be struck on the reverse of their coins, and the Cyrenean doctors were reckoned among the most eminent in the world; its value was estimated by its weight in gold; although such extravagant powers were ascribed to it, there can be no doubt that it possessed some very active principles, and accordingly it has always been a point of much interest to determine what the plant was; it has been successively referred to Opopanax, to Ferula tingitana, to Laserpitum siler, and gummiferum, and to Thapsia asclepium; but the discovery of Cyrene by Della Cella seems to set the question at rest; it is the only umbelliferous plant inhabiting those regions, which will at all answer to the figure struck on the Cyrenean coins, and this agrees as well with such rude representations as can be expected from any plant. While, however, it may be considered certain that the Silphion of Cyrene was yielded by Thapsia silphion, it by no means follows that all the Silphion was from that species; on the contrary, Pliny (*Hist. Nat.* lib. xxii. c. 23) expressly states, that in his time it was chiefly imported from Syria, the worst kind being the Parthian, the Median of better quality, and that of Cyrene altogether lost. (L.)

THAPSIA VILLOSA. South of Europe.

Root purgative; may be used for jalap.

TORDYLIUM. (De Cand. iv. 197.)

*TORDYLIUM OFFICINALE. (E. B. 2440.) *Small hart's wort.*

Fl. white, with large rays. June, July. Annual. Doubtful native.

Roots and fruit diuretic.

TORILIS. (De Cand. iv. 218.)

*TORILIS ANTHRISCUS. (E. B. 987.) *Caucalis minor, Tordylium anthriscus, Hedge parsley, Hen's foot.*

Fl. white, with a reddish tinge. July. Annual. Hedges and waste places.

Roots and fruit diuretic.

TRINIA. (De Cand. iv. 103.)

TRINIA VULGARIS. Var. β. *Sesili glaucum, Glabrous Hone wort.*

Fl. white. May, June. Perennial. Limestone rocks.

Roots purgative, not so acrid as Athamanta mathioli, or the Thapsiæ.

ORDER 86. ARALIACEÆ. (De Cand. iv. 251.)

Tube of the *calyx* adnate to the ovary, limb entire or toothed; *petals* 5—10, alternate with the teeth of the calyx, valvate in æstivation, very rarely wanting, and then (in Adoxa) perhaps converted into stamens; *stamens* as many as the petals, rarely double their number, inserted into the margin of the large epigynous disc; *anthers* two-celled, peltate; *ovary* adnate to the calyx, composed of two or many one-seeded cells; *styles* many, simple, either distinct and diverging, or concreted into one, (rarely none); *stigmas* simple; *berry* 2—15 celled, crowned by the entire or dentate limb of the calyx, cells equal in number to the styles, one-seeded; *seeds* angular, erect; *testa* crustaceous; *endopleura* membranous; *embryo* small, inverted, surrounded by a copious fleshy albumen. *Trees, herbs*, or *shrubs* sometimes climbing or adhering by root-like fibrillæ; *leaves* alternate, exstipulate, petiolated, simple, or variously compounded; *petioles* long, often dilated and thickened at the base; *flowers* axillary or terminal, more or less umbelled.

ARALIA. (De Cand. iv. 257.)

ARALIA HISPIDA. *Wild elder.* Virginia and Pennsylvania. Sudorific.

ARALIA NUDICAULIS. *False sarsaparilla.* North America.

ARALIA RACEMOSA. North America.

Roots bitter. (G.) The first is alterative and tonic, and is considered by the American writers to be as valuable a medicine as sarsaparilla. (L.)

ARALIA SPINOSA. *Angelica tree.* North America.

Bark astringent; berries used in rheumatism and colic. (G.) A tincture of the wood is also employed to allay the spasms in colic. (L.)

HEDERA. (De Cand. iv. 261.)

*HEDERA HELIX. (E. B. 126.) *Common ivy.* Fl. pale green. October, November. Large shrub. Trees, rocks, &c.

Leaves used internally in atrophy, and to dress issues; also boiled in wine as a wash to kill vermin; berries purge; the trunk yields a gum resin. (G.) It is also mentioned as a sudorific, and was once reputed to prevent drunkenness and to dissipate the effects of wine. (L.)

HEDERA UMBELLIFERA. *Aralia umbellifera.* Mountains of Amboyna.

Yields a blackish or dull brown resin, with a very powerful aromatic camphorated smell. (L.)

PANAX. (De Cand. iv. 252.)

PANAX FRUTICOSUM. Ternate, Java.

Herb diuretic.

PANAX MOROTOTONI. *P. undulata.* Cayenne.

Wood, bark, leaves, flowers, and fruit aromatic.

PANAX QUINQUEFOLIUM. *Ginseng.* China and North America.

Root cordial, alexiterial, and aphrodisiac, dose ʒj.—ij.; chewed, or sliced and made into tea, often confounded with *nin sing.* (G.) Root an agreeable bitter sweet, with some aromatic pungency; has a prodigious reputation among the Chinese, as a stimulant and restorative, under the name of "Ginseng;" by Europeans and Americans considered nothing more than a demulcent approaching liquorice in its properties; this, however, requires further investigation, for we cannot believe that all the Chinese say, believe, and practise, is fabulous or imaginary. (L.)

ORDER 87. CORNEÆ. (De Cand. iv. 27.)

Calyx of four sepals, united together into a tube, adnate to the ovary, limb four-lobed; *petals* four, oblong, broad at the base, inserted into the upper part of the tube of the calyx, regular, valvate in æstivation; *stamens* four, inserted with the petals and alternate with them; *anthers* ovate, oblong, bilocular; *style* filiform; *stigma* simple; *drupe* baccate, crowned by the remains of the calyx, having a bilocular nut; *seed* solitary, pendulous in the cells; *albumen* fleshy; *radicle* superior, shorter than the two oblong cotyledons. *Trees* and *shrubs*, rarely *herbs*; *leaves* (excepting in one species) opposite, whole, or toothed: *flowers* capitate, umbellate, or corymbose, naked, or with an involucre, rarely by abortion diæcious; *fruit* edible.

CORNUS. (De Cand. iv. 271.)

CORNUS CIRCINATA. *Round-leaved dogwood.* America.

Bark of root used as a poultice. (G.) Has been recommended in diarrhœa. (L.)

Cornus florida. *American dog-wood.* North America.

Bark a powerful bitter, with an astringent and somewhat aromatic taste; it acts as a tonic, astringent, and antiseptic, approaching Cinchona in its general effects, and not inferior to it in the cure of intermittents. (Bigelow.) The young branches stripped of their bark, and rubbed with their ends against the teeth, render them extremely white; from the bark of the roots the Indians extract a good scarlet colour. (Barton.) (L.)

**Cornus mas. *C. mascula, Cornelian cherry, Male cornel.*

Fl. yellow. February, March. Small tree. Europe.

Fruit edible, very astringent, useful in loosenesses. (G.) Bark has been employed with great success in intermittent fevers. (O'Sh.)

*Cornus sanguinea. (E. B. 249.) *Cornus fœmina, Dogwood, Gutter tree, Wild cornel.*

Fl. white. June. Large shrub. Hedges, &c.

Seeds yield oil, as well as those of the former species; wood used for making charcoal for gunpowder. (G.) Flavour of oil very agreeable, a good substitute for olive oil. (O'Sh.)

Cornus sericea. *C. cærulea, C. lanuginosa.* Moist woods in the United States.

Said to be one of the best tonics in North America, nothing having been found in the United States that so effectually answers the purpose of Peruvian bark in intermittent fevers. (L. ex Barton.)

*Cornus suecica. (E. B. 310.) *Dwarf cornel.*

Fl. dark purple. July, August. Perennial. Alpine pastures.

Is reputed to have tonic berries which increase the appetite, whence its Highland name *Lus-a-chrasis*, or plant of gluttony. (L.)

Order 88.—LORANTHACEÆ. (De Cand. iv. 277.)

Flowers hermaphrodite, or of different sexes; tube of the *calyx* surrounded at the base by scales, and adnate to the ovary: limb short, entire, or lobed; *petals* 4—8, free, or more or less coherent, valvate in æstivation; *stamens* as many as the petals, and opposite to them; *filaments* more or less adnate to the corolla, or wanting; *style* filiform or none; *stigma* capitate; *berry* one-seeded; *seed* surrounded by a membranous integument; *albumen* fleshy; *radicle* superior, thickened or truncated at the apex. Generally parasitical plants, with opposite, more or less fleshy, entire *leaves.*

Bark astringent; berries contain a principle analogous to caoutchouc, called bird-lime.

Loranthus. (De Cand. iv. 286.)

Loranthus europæus. *Viscum quercinum, Misseltoe of the oak.*

Esteemed a sacred plant by our ancestors, hence extirpated by them, but still found plentifully on the oaks in those parts of Europe where the druidical religion was not established; the common misseltoe, which is rarely found on the oak, is still used as a substitute for it in medicine, and also to deck our churches and preserve our homes from evil spirits.

VISCUM. (De Cand. iv. 277.)

*VISCUM ALBUM. (E. B. 1470.) *Viscum misseltoe, Misseltoe.*

Fl. yellowish. May. Small shrub. Parasite on apple and thorn trees, and on the oak near Basingstoke, &c.

Berries very purgative, used to make bird-lime; leaves anti-epileptic, in doses of ℈j. to ʒj. twice a day.

ORDER 89.—CAPRIFOLIACEÆ. (De Cand. iv. 321.)

Calyx consisting of five (rarely four) sepals, coherent into a tube, adnate to the ovary; *corolla* inserted into the calyx, gamopetalous, or of as many petals as there are lobes of the calyx, more or less united at the base, sometimes irregular, not valvate in æstivation; *stamens* inserted into the calyx, adnate to the base of the corolla, equal in number to, and alternate with, the lobes of the corolla; *style* exserted or none; *stigmas* 1—3; *berry* generally crowned by the limb of the calyx, one or many-celled, cells one, many-seeded, spermoderm crustaceous; *embryo* in the centre of the albumen which is fleshy; *radicle* superior; *cotyledons* ovate, oblong. *Shrubs* with opposite, or alternate exstipulate *leaves*; *flowers* generally corymbose, sometimes terminal or axillary.

LINNÆA. (De Cand. iv. 340.)

*LINNÆA BOREALIS. (E. B. 433.) *Two-flowered linnæa.*

Fl. rose-coloured, yellowish within, fragrant. May, June. Perennial. Northumberland, rare.

Used in rheumatism and gout; astringent and diuretic.

LONICERA. (De Cand. iv. 330.)

*LONICERA CAPRIFOLIUM. (E. B. 799.) *Honeysuckle, Pale perfoliate Honeysuckle.*

Fl. yellowish. June. Climbing shrub. Oxfordshire and Cambridgeshire; rare.

*LONICERA PERICLYMENUM. (E. B. 800.) *Caprifolium, Matrisylva, Periclymenum, Common honeysuckle, Woodbine.*

Fl. buff-coloured, externally red. June, October. Climbing shrub. Woods and hedges; common.

Leaves used in detersive gargles; flowers anti-asthmatic.

SAMBUCUS. (De Cand. iv. 321.)

SAMBUCUS CANADENSIS. *American elder.* North America. Berries, *Sambucus, P. U. S.*, used as those of Sambucus nigra.

*SAMBUCUS EBULUS. (E. B. 475.) *Dwarf elder, Dane wort, Ebulus.*

Fl. white. July. Perennial. Way sides and waste places.

Root, ℥jss, a strong purge; leaves used in poultices for the gout and piles; berries used to dye blue, and also to make wine.

*SAMBUCUS NIGRA. (E. B. 476.) *Sambucus, Common elder.*

Fl. cream-coloured. June. Small tree. Coppices and hedges.

Inner bark, gr. v. to ℈j., very active, antihydropic; leaves a nauseous purgative; flowers diaphoretic, useful in disorders of the chest, discussive, and attenuant; berries used to flavour sugar and wine, poisonous to poultry; dry berries, *Grana actes*, useful in dropsy. (G.) Inner bark purgative, in large doses emetic; flowers employed in French Pharmacy as expectorants. (L.)

SAMBUCUS NIGRA VIRESCENS. *White berried elder.* Var. β. of S. nigra. (D. C.)

Flowers used to give wine the flavour of Frontignac.

SAMBUCUS RACEMOSA. *Mountain elder.* Middle and south of Europe.

Narcotic.

TRIOSTEUM. (De Cand. iv. 330.)

TRIOSTEUM PERFOLIATUM. *Fever root, Wild ipecac.* United States.

Root, *Triosteum, P. U. S.*, emetic and cathartic; bark of the root bitter, tonic. (G.) Leaves diaphoretic, efficacy impaired by age, should be kept in closely-stopped jars, and renewed annually. (L.)

VIBURNUM. (De Cand. iv. 323.)

VIBURNUM CASSINOIDES. *Cassine peragua, Perygua, Cashio berry bush.* North America.

Leaves purgative, sometimes emetic or diaphoretic, used as a specific in diabetes.

*VIBURNUM LANTANA. (E. B. 331.) *Mealy guelder rose, Pliant mealy tree, Wayfaring tree.*

Fl. white. June. Large shrub. Woods and hedges on chalky soil.

Berries drying, astringent; bark of root made into bird-lime.

*VIBURNUM OPULUS. (E. B. 332.) *Common guelder rose.*

Fl. white, outer ones abortive, large. June, July. Large shrub. Woods and coppices; common.

Leaves and berries refreshing, and used in astringent gargles.

**VIBURNUM TINUS. (Bot. Mag. 38.) *Laurestinus, Wild bay.*

Fl. white, tinged with pink. December, March. Large shrub. Native of south of Europe.

Berries purge violently.

ORDER 90. RUBIACEÆ. (De Cand. iv. 341.)

Calyx adhering to the tube of the ovary, 4—5, rarely six-lobed; *corolla* gamopetalous, inserted into the upper part of the tube of the calyx, with 4—5, rarely 3—8 lobes, cohering variously, twisted or valved in æstivation; *stamens* equal in number to the segments of the corolla, alternate with them, and more or less adnate with its tube; *anthers* oval, two-celled, bursting inwardly; *ovary* within the calyx, and united with it, usually two, or many-celled, rarely one-celled, crowned with a fleshy urceolus or calycine limb; *style* single, springing from the urceolus; *stigmas* generally two, distinct, or more or less united; *fruit* baccate, capsular, or drupaceous, two or many-celled, cells 1—2, or many-seeded; *seeds*, in the cells containing but one, fixed by the apex, or more generally by the base; in those which contain many, generally horizontal, and attached to a central placenta; *albumen* large, horny, or fleshy: *embryo* straight, or slightly curved, imbedded in the centre of the albumen, with a terete radicle turned towards the hilum; *cotyledons* foliaceous. *Trees, shrubs*, or *herbaceous plants*, with simple, very entire, opposite, rarely verticillate *leaves*, generally bistipulate; *flowers* small, rotate, or tubulose.

ANTIRRHŒA. (De Cand. iv. 459.)

ANTIRRHŒA VERTICILLATA. *A borbonica, Cunninghamia verticillata, Malanca verticillata.* Isles of Bourbon and Mauritius.

Root and bark said to be powerfully astringent. In Bourbon it is employed as a styptic to restrain hæmorrhage, and is known by the name of *Bois de Losteau.* (L.)

ASPERULA. (De Cand. iv. 581.)

*ASPERULA ARVENSIS. *Field woodruff.*

Fl. blue. July. Annual. Cornfields near Devonport. Europe.

ASPERULA TINCTORIA.

Roots dye red; herbs opening.

*ASPERULA CYNANCHICA. (E. B. 33.) *Rubia cynanchica, Squinancy wort.*

Fl. white, or blush coloured. June, September. Perennial. On chalk downs.

Used externally in quinsy.

*ASPERULA ODORATA. (E. B. 755.) *Asperula, Sweet woodruff.*

Fl. white, odorous. May, June. Perennial. Woods.

Hepatic and deobstruent internally; antipsoric externally. (G.) Also reckoned diuretic. (L.)

BORRIERA. (De Cand. iv. 540.)

BORRIERA FERRUGINEA. *Spermacoce ferruginea.* Brazil.

Root emetic. (L.)

BORRIERA POAYA. *Spermacoce poaya.* Brazil.

Root emetic, substituted for ipecacuanha; leaves at first sweet, but afterwards acid; a decoction of them used in the cure of colic. (L.)

BUENA. (De Cand. iv. 356.)

BUENA HEXANDRA. *Cinchona hexandra, Cosmibuena hexandra.* Brazil.

An indifferent sort of fever bark is produced by this tree; M. Guibourt thinks it may be what has been known in common as *Quinquina colorada;* he received the latter under the name of *Brazilian quinquina;* It contains a very little cinchonine, is thin, blood-coloured within, very bitter. (L.)

BUENA OBTUSIFOLIA. *Cinchona grandiflora, Cosmibuena obtusifolia.*

Properties, &c., the same as Cinchona macrocarpa, which see.

CANTHIUM. (De Cand. iv. 473.)

CANTHIUM PARVIFLORUM. *Webera tetrandra.* India.

Root bitter, red. (G.) A decoction of the leaves used in certain stages of flux, is also anthelmintic; bark and young shoots used in dysentery. (L. *ex Ainslie.*)

CEPHAELIS. (De Cand. iv. 532.)

CEPHAELIS IPECACUANHA. *Callicocca ipecacuanha.* Brazil, New Granada.

The well-known emetic root called ipecacuanha, is obtained from this plant. In commerce it is called the annulated, Brazilian, or Lisbon ipecacuanha, to distinguish it from the roots of other emetic plants also collected in Brazil for officinal use; it is chiefly used as an emetic, sudorific, and expectorant; its powder acts upon the respiratory passages as an irritant, producing spasmodic asthma; in some cases the mere odour of the root seems sufficient to excite difficulty of breathing, with a feeling of suffocation. (Pereira.) The outside contains sixteen per cent. of emetine; the woody fibre in the centre only one quarter per cent.

According to Pereira the varieties of ipecacuanha are:—

α. *Brown annulated ipecacuanha,* Richard; *Brown ipecacuanha,* Lemery; *Grey, or annulated ipecacuanha* of Merat.

β. *Red annulated ipecacuanha,* Richard; the *Red-grey ipecacuanha* of Lemery and Merat.

γ. *Grey annulated ipecacuanha,* Richard; *White-grey ipecacuanha,* Merat; *Greater annulated ipecacuanha,* Guibourt.

CEPHAELIS MUSCOSA. Jamaica and West Indies.
CEPHAELIS PUNICEA. Jamaica and West Indies.
Are also emetic, according to Von Martius.

CHIOCOCCA. (De Cand. iv. 482.)

CHIOCOCCA ANGUIFUGA. *C. Brachiata, C. racemosa.* South America and West Indies.

CHIOCOCCA DENSIFOLIA. *Cahinca.* Brazil.

The roots of these two species are employed with confidence by the natives of Brazil, as a certain remedy for serpent bites; an infusion of the bark of the root produces the most violent emetic and drastic effects; copious perspirations follow, and these are succeeded by a gentle sleep; their violent action renders them dangerous to employ, except in cases of poisoning, or in such maladies as require a prompt and complete evacuation of the intestines; Von Martius supposes they would possibly prove beneficial in hydrophobia. They have been introduced into European practice, and appear to be of the greatest use as remedies in dropsy. (L.)

Cinchona. (De Cand. iv. 351.)

Dr. Lindley, in his Medical Botany, enters at considerable length upon the questions relating to the sources of the barks employed in medicine. He says, "This is probably the most important genus in the whole Botanical Materia Medica, as it has constantly been the source of more disputing, confusion, misapprehension, and misrepresentation, than any other medico-botanical question." As the bark is exceedingly dissimilar in quality, and the consumption enormous, it is a point of great importance to ascertain whence the finest qualities are to be procured, and how to avoid the inconvenience and loss occasioned by the importation of a bad article. In examining this question, Dr. Lindley attributes much of the confusion still existing as to the sources of the commercial barks, to the false estimate formed of the botanical skill, and consequent credibility, of the most original writers upon this subject; and the proofs he adduces of the botanical incompetency of Don José Mutis, whose species are still adopted by the British colleges as the sources of the officinal barks, appear to be exceedingly satisfactory and conclusive. Zea also is considered as an inferior authority by him, and the statements published by MM. Humboldt and Bonpland, are also shown to be unsatisfactory, as far as the synonymes are concerned, they having been materially misled by Mutis, in whose house Humboldt resided. Lambert, Romer, and Shultz, and even De Candolle, have also been in many instances misled in a similar manner.

On the other hand, Lindley considers the opinions and writings of Ruiz and Pavon to be most accurate, and, as far as they go, to be deserving of the utmost confidence; another authority considered by him as deserving great credit and attention, is that of M. Poppig, many of whose observations, contained in his Narrative of a Journey in South America, are quoted with great respect. Lindley's inquiries form a most valuable and elaborate treatise on the subject of the cinchonas, and the result is given in the following pages, in which his observations have chiefly been followed. They have also been carefully collated with the valuable remarks made by Dr. Pereira in his Elements of Materia Medica.

Cinchona acutifolia. *Cascarilla de hoja aguda.* Low groves of the Peruvian Andes in Chicoplaya by the river Taso. One of the worst species for medicinal purposes, sometimes found in parcels of the other barks. (Ruiz and Pavon.)

Ruiz, in his MSS. asserts, that it does not deserve any attention for medical uses. (L.)

CINCHONA CADUCIFLORA. Near the town of Jaen de Bracamoros.

It is stated in the *Plantæ Æquinoctiales*, that this is called *Cascarilla bora*, and that no use is made of the bark, although that of the trunk contains a great deal of resin. (L.)

CINCHONA CONDAMINEA. *Cinchona officinalis* of Linnæus. *Jesuit's bark-tree, Loxa-tree.* Mountains near Loxa, &c.

Bark, *Jesuit's bark, Peruvian bark, Grey bark, Pale bark, Cascarilla fina, Quinquina gris, C. P., Kinakina cinericea, Cortex pallidus, Cinchonæ officinalis cortex communis, C. lancifoliæ cortex, P. L., Cinchona pallida, P. U. S.* Thin, very fine, much rolled, inside rusty fawn, aromatic, breaks clean between the teeth, tonic, resinous, middling bitter, very rich in cinchonine, yields but little quinine. (G.)

There seems to be no doubt that this species furnishes the *Pale crown*, or *Loxa bark*, of English commerce, or at all events a principal part of it.

CINCHONA CORDIFOLIA. (L. Med. Bot. 419.) Mountains of New Granada.

This is made by De Candolle a variety of *C. pubescens*, but Lindley shows that it is a distinct species. He also supposes that the *Quina baya*, or *Q. amarilla* of Santa Fé, which Ruiz in his MSS. describes as a sort of bad quality, of which more than six hundred arobas were landed at Barcelona in 1804 and 1805, was the produce of this plant. (*Vide* Med. Bot. p. 419.) *Yellow bark*, which in the London and Dublin Pharmacopœias is erroneously said to be afforded by this tree, is the produce of an unascertained species of Cinchona, it being certain that C. Cordifolia does not yield the yellow bark of English commerce. (*Vide* C. Lanceolata.) (L.) The bark of this species is the *Quina amarilla*, or *Yellow cinchona* of Mutis, which both Bergen and Guibourt have ascertained to be *Hard Carthagena bark*. It must not be confounded with the *Yellow bark* of English commerce. (Pereira.)

CINCHONA DICHOTOMA. (Fl. Peruv. ii. 53 to 197.) (*Cascarillo ahorquillado.* R. and P.) Andes near Pueblo Nuevo.

Uncertain whether this is really a cinchona; according to R. and P. the bark has the reputation in Chicoplaya of being one of the *Quinas finas*, or best for medicinal purposes. (L.)

CINCHONA FUSCA. Vide *C. rosea*.

CINCHONA GLANDULIFERA. (Fl. Peruv. iii. 1, t. 324.) *Cascarillo glanduloso.* Mountains of Panatahuas and Huamalies, &c.

Bark, *Havannah bark, Huanuco*, in larger pieces than that of C. Humboldtiana, outside dark fawn, warty and knobby, with perpendicular cracks, inside fawn, fibrous, slightly resinous, bitter, slightly aromatic; frequently mixed with that of *Buena obtusifolia*. *Black huanuco*, *Cascarilla negrilla*, a darker variety of the bark. (G.) Called *Cascarilla negrilla* by the quina gatherers; ranks next in quality to the bark of C. Lanceolata, and is much better than the *Quina naranjada* of Santa Fé. (Ruiz.) In his MSS. he adds, that although it is of good quality itself, it always comes to Spain mixed with inferior sorts. Poppig describes this as furnishing the finest bark gathered near Cuchero. (L.)

CINCHONA HIRSUTA. (Fl. Peruv. ii. 51, t. 192.) *Cascarilla delgado*.

(This is De Candolle's var. γ of C. pubescens, but Lindley is assured of its being a distinct species. *Vide* Med. Bot. 421.)

Bark, *Kinkina loxa delgada*, *Cascarilla delgadilla*, febrifuge, power strong. (G.) It yields a kind of *Cascarilla fino*, employed in medicine formerly under the name of *Quina delgadilla* or *delgada*, but not collected now, because other kinds, especially C. nitida, can be gathered so much more readily. (Ruiz.) It, however, appears to be of the best quality, and probably forms part of the fine yellow bark of the shops. (L.)

CINCHONA HUMBOLDTIANA. *C. ovalifolia*. (Humboldt.) Forests in the province of Cuença.

Bark, *Cascarilla peluda*, resembles that of *Buena obtusifolia*, cracked lengthwise, inside clear yellow, bitter, astringent, resinous, is usually mixed with that of *C. glandulifera*. (G.) Lindley doubts whether there is not a mistake in calling this *Cascarilla peluda*, or *Velvet-leaved quina*, because the leaves are so little downy, that an ordinary observer would call them smooth, except when young. (Med. Bot. 417.) The bark of this species is not much esteemed. (Pereira.)

CINCHONA LANCIFOLIA. *C. glabra*, *C. lanceolata*, *C. officinalis* of Vahl, *Quina naranjada*.

Bark, *Crown bark*, *quinquina Orangé*, *C. P.*; rather large, inside fawn, coat brown, rugged, sometimes peeled, split transversely; smells rather spicy, very bitter, tonic, grows darker in water or alcohol; highly esteemed in America; yields much more quinine than cinchonine. *C. angustifolia*. (De Candolle's var. γ.) A variety; bark, *pale red bark;* coat, whiter, less rugged, and neither so bitter, nor so astringent; *Cascarilla lampigna*, a variety of this bark, very thick, woody, in large pieces, not rolled, taste very slight, contains no resin. (G.) *C. lancifolia* has the credit of furnishing the finest *pale bark* of commerce; but Ruiz in his MSS. asserts, that it cannot be compared for good qualities with finer kinds of Loxa bark; Bergen says, that what is called in commerce *Dark ash bark*, *False Loxa*, or *Dark ten cinchona*, agrees with samples of this from the collection of Ruiz.

The bark erroneously referred to this species by the London and Dublin Pharmacopœias, is produced by C. condaminea, which see.

CINCHONA LANCEOLATA. (Fl. Peruv. ii. 51, 3, t. 223.) *Cascarillo lampino.* Near the city of Huanuco.

This also is considered by De Candolle as a variety of C. lancifolia, and marked by him β; but Lindley says, that it cannot possibly be confounded with any other species, and is consequently distinct; it is said by the authors of the *Flora Peruviana*, to be commonly called *Cascarillo*, or *Quino bodo amarillo*, on account of the colour of the bark inside, which in flavour is very like that of *Quina de calisaya;* Ruiz says it is mixed in commerce with that of *C. hirsuta* and *C. nitida*, and he suspects it to be the real source of *Calisaya bark;* he also considers it as one of the finest sorts. Lindley presumes this must be the source of the yellow bark of the English druggists; it is, however, uncertain whether the *Calisaya bark* from La Paz, at the extreme southern limit of the Cinchona districts, inhabiting a different climate, has the same origin. (L.)

CINCHONA LUCUMÆFOLIA. (Pavon.) Loxa, in Peru.

This is no doubt the *Cascarillo hoja de Lucumo* mentioned, but not described, by Ruiz in his MSS.; nothing is said of its quality, but he places it among those which furnish the *Quina fina de Loxa.* (L.) By De Candolle it is considered as a variety (γ) of C. macrocalyx, but it does not at all agree with the specific character of that plant as given by him. (L.)

CINCHONA MACROCARPA. *C. ovalifolia* of Mutis. Loxa, Santa Fé.

Bark, *Pale bark, Female Loxa, Lima bark, Quinquina blanc, C. P.*, outside whitish grey, cracked transversely; inside pale fawn, breaks clean, not very resinous nor aromatic, mixed with other bark, especially that of Myroxylon pedicellatum. *C. longiflora*, a variety; bark, *Guaiana bark*, in long pieces, thick, bitter, scentless. (G.)

CINCHONA MAGNIFOLIA, (De Cand.,) (of Ruiz, not of Humboldt and Bonpland.) *C. grandifolia, C. litescens, C. caduciflora*, (Lambert's Illustrations 11, not of Bonpland,) *C. oblongifolia*, (Mutis, according to R. and P., not of Lambert,) *Cascarillo amarillo*, (Ruiz, Quinol 71.) Abundant in the mountains of Panatathuas.

Bark, *Red bark, Quinquina rouge, C. P., Cascarilla amarilla, Cortex ruber, Cinchonæ officinalis Cortex ruber, cinchonæ oblongifoliæ cortex, Cinchona rubra, P. U. S.*, thick, fibrous, brown, red or dark fawn, coat rugged, and cracked in various directions, antiseptic, used in gangrenous cases; contains quinine and cinchonine in nearly equal quantities. (G.)

According to Ruiz, this is one of the species known under the name of *Cascarillo de flor de Azahar*, and not met with in commerce except in the form of an extract, which has been found of excellent quality. It derives its name from the resemblance between the smell of its flowers and those of the orange, and is one of those discovered in the kingdom of Santa Fé by Mutis; (R. and P.) Ruiz in his MSS. describes the bark as being of indifferent quality, and of little value in the markets; he says it is the *Quina roxa* of Santa Fé, and consequently the *red bark* of Carthagena, from which port it is shipped for Europe. This has been questioned by Mr. Lambert, but found true by Bergen, who found it to be the bad bark known in commerce under the name *Quinquina nova*; the source of the valuable red bark of Lima, or *Quina colorada*, is at present unknown. Poppig also found near Cuchero a *Corteza de Azahar*, which he refers to this species, and adds, that it is of inferior quality, and has been chiefly employed in the adulteration of the superior kinds of bark, from which, however, it was to be easily distinguished by its very sharp and disagreeably bitter flavour, so different from the fine aromatic taste of the genuine kind, so that the imposition could not prevail to any great extent. (L.)

CINCHONA MICRANTHA. *C. scrobiculata.* Peru.

Bark, *new Carthagena bark*, yellow, flat, thready, brittle, coat silvery white, not cracked, decoction pale, slightly bitter and astringent; yields little or no precipitate with infusion of gall-nuts, feebly febrifuge. Both Humboldt and Bonpland, and Ruiz and Pavon, state that it is commonly called *Cascarilla fina*; the former say that of all the species of Quina inhabiting the province of Jaen de Bracamoros, it is the most common and the most esteemed. The inhabitants of the town of Jaen collect annually a great quantity of the bark, which they send to the town of Picera, whence it is shipped to Lima; Ruiz in his MSS. admits its excellence, but declares that it is never found alone in commerce, being always mixed with other species by the traders. It is sometimes called *Casc. fina de Chicoplaya.* Poppig calls it *Cascarilla provinciana*, and states that three kinds of it are known in commerce; one of which, called *Pata de galinazo*, is peeled from the young and upper branches. M. Reichel, who compared Poppig's specimens with those of Bergen, ascertained that *Casc. provinciana* is the *Huanuco bark* of commerce, and that the *Pata de galinazo* forms a small portion of the so-called *Lima bark* of commerce; it is therefore the origin of the *silver* and *grey cinchona* of English commerce. (L.)

CINCHONA NITIDA. (Fl. Peruv. ii. 50, t. 191.) *Cascarillo officinal.* (Ruiz, Quinol. p. 56.) Andes in Peru.

A variety of C. lancifolia highly esteemed in America. (G.)

This is a variety of De Candolle's C. lancifolia, described by Lindley as a different species. According to Ruiz, this is considered in the provinces of Huanuco, Tarma, Huamalies, and Xanxa, to be the best of all the barks, and it fetched in his time the highest price; it is called *Cascarillo*, or *Quino fino*, the name given to several other barks.

Cinchona oblongifolia. (Lambert, not of Mutis.) Jaen de Loxa.

According to Lindley, the bark of this species is unknown in commerce. It nevertheless is given in the latest edition of the London Pharmacopœia, as yielding one of the barks directed by the College of Physicians to be employed in the shops.

Cinchona ovata. (Fl. Peruv. ii. 52, t. 195.) *Cascarillo pallido*. (Ruiz, Quinol, 74.) Andes near Pozuzo and Panao.

Given by De Candolle as variety *β*. of C. pubescens, but considered by Lindley as a distinct species.

Ruiz states, that this is called in Panao, *Cascarillo con corteza de color de Pata de Gallareta*. The bark is not employed in commerce, but it has been used in preparing the extract of cinchona by the factors of Panao. Pavon considers it as identical with C. cordifolia of Mutis, the *Quina amarilla* of Santa Fé; but Ruiz in his MSS. does not confirm this; on the contrary, he is unable to say what species produces the *Quina amarilla* or *Q. Baya de Santa Fé*, and he speaks of this species the *Pata de gallareta*, as quite a distinct kind of the lowest quality; according to Bergen, this is the origin of the *Jaen*, corrupted into *Ten bark*, or *Ash bark*, of commerce, but this is very doubtful; there being no proof of its growing about Jaen. (L.) *Ash cinchona* was found by Bergen to be identical with the bark of *C. ovata* contained in Ruiz's collection. (Pereira.)

Cinchona pubescens. (Vahl.) *C. Purpurea*, (Fl. Peruv.,) *C. cordifolia*, (Mutis,) *C. officinalis*, (Linn.,) *C. tenuis*, *C. pallescens*. Peru.

Bark, *yellow bark, Quinquina jaune, Q. jaune royal, Q. calisaya, C. P., Cortex flavus, Cinchonæ cordifoliæ cortex, Cinchonæ officinalis cortex flavus, Cinchona flava, P. U. S.*, in large pieces, slightly rolled, fine grained, fibres fine, coat thick, and may be separated in flakes, sometimes peeled; inside deep yellow, very bitter and astringent; decoction peach-bloom colour; yields much more quinine than cinchonine. (G.) For Lindley's opinion respecting the origin of the yellow bark, see C. cordifolia and C. lanceolata; speaking of this, he says, "It is one of the species called in Peru, *Cascarillo bobo de hoja morada*, according to Ruiz, who, in the Quinologia says, that the bark is not known separately in commerce, but is mixed with that of C. lanceolata, hirsuta, and nitida; it appears to possess all their good qualities; but in his MS. history, he alters this opinion, and classes it only among the second-rate barks." Poppig calls it *Casc. bobo colorada*, and says, "The bark in a fresh state is extremely bitter, and may probably be found useful for making cheap decoctions, as it can be sold at a very low price. It is not now universally collected, but formerly served for occasionally adulterating the better kinds,—an imposition, however, that was easily detected. Riechel, who examined Poppig's specimens of the bark, determined them to belong to the *Huamalies bark* of commerce. (L.)

Peru.

CINCHONA PURPUREA.

Formerly considered as a variety of *C. pubescens.*

Bark, *Mulberry-leaf bark*, yellowish brown, in good esteem in America. (G.) Vern. dicta *cascarillo bobo de hoja morada.* (De Cand.)

Peru.

CINCHONA ROSEA. *Lasionema roseum.*

Bark, *Kinkina nova*, thick, woody, long, straight, flat, smooth; coat whitish; inside red or flesh colour, mawkish, then acrid, nauseous; infusion and tincture astringent, not bitter, slightly febrifuge; *C. fusca*, bark, *Cascarilla asmonich*, chocolate-coloured on the inside, very styptic; a variety of *C. rosea*, *Cascarillo pardo*, *Cinchona aharquillado*, brown with white spots, extremely bitter; another variety. (G.)

CINCHONA TRIFLORA.

Bark, *Jamaica bark*, in a full dose emetic.

Cinchona laccæfera, fresh bark, scraped on the inside, yields a red lake; dried bark, *Socchi*, red, thick, slightly rolled, spongy. (G.)

Dr. Pereira, in his Materia Medica, proposes the following arrangement of the Cinchona barks:—

Division 1. Genuine Cinchona barks.
  Sect. 1. With a brown epidermis.
    α. Pale or grey cinchonas.
    β. Yellow cinchonas.
    γ. Red cinchonas.
  Sect. 2. With a whitish epidermis. (*White cinchonas.*)
    α. Pale or grey cinchonas.
    β. Yellow cinchonas.
    γ. Red cinchonas.
Div. 2. False Cinchona barks (obtained from genera allied to, and which have been mistaken for, Cinchona.)

COFFEA. (De Cand. iv. 498.)

COFFEA ARABICA. *Coffi, Coffee shrub.* Low mountains of Arabia Felix.

The fresh seeds are febrifuge, diuretic, and tonic; decoction used for that of Peruvian bark. (G.) The albumen of the seeds constitutes the aromatic coffee of commerce, the agreeable stimulating effects of which, after being roasted, are well known. It has the power of removing drowsiness, and of retarding the access of sleep, for some hours. It has been prescribed medicinally in various derangements of the chylopoietic viscera, and in head-aches resulting from indigestion. (L.)

CONDAMINEA. (De Cand. iv. 402.)

CONDAMINEA CORYMBOSA. *Macrocnemum corymbosum.* Peruvian Andes.

Bark bitter, viscid, inside white, often mixed with that of cinchona. (G.) Bark febrifugal; the bark-gatherers of Peru are said by Ruiz and Pavon to use this plant for adulterating cinchona; its bark is only slightly bitter, and may be easily recognized by its being white inside, rather bitter and viscid. (L.)

COUTAREA. (De Cand. iv. 350.)

COUTAREA SPECIOSA. *Portlandia hexandra.* Guayana, Cayenne.

The bark of French Guayana is said to be procured from this shrub; its properties are similar to those of cinchona.

EXOSTEMMA. (De Cand. iv. 358.)

EXOSTEMMA BRACHYCARPUM. *Cinchona brachycarpa.* Jamaica.

Bark emetic in a full dose. (G.)

EXOSTEMMA CARIBÆUM. *Cinchona caribæa, C. Jamaicensis, Quinquina piton, Sea side beech.* West Indies and Mexico.

Bark, *Caribbee bark, Quinquina des antilles,* cinnamon colour, bitter, scentless, cheap. (G.) Febrifüge and emetic; smell nauseous, excessively bitter and disagreeable; according to Dr. Wright the flavour is at first sweet, with a mixture of horseradish and aromatics, afterwards excessively bitter. According to Guibourt, the little crystalline points with which it sparkles when broken, are some principle peculiar to this bark. (L.)

EXOSTEMMA CORIACEUM. *Cinchona coriacea.* St. Domingo.

Bark highly esteemed in America.

EXOSTEMMA FLORIBUNDUM. *Cinchona floribunda, C. Montana, C. sanctæ Luziæ, C. Luziana.* West India islands.

Bark, *St. Lucie bark, Quinquina piton,* thick, brown, rugged; inside rusty fawn; mostly used externally, being apt to excite vomiting and purging. (G.) Bark similar to that of *E. caribæum,* but rather drastic; Pelletier and Caventou found in it neither quinine nor cinchonine; it is also called *Quinquina of St. Lucia.* (L.)

EXOSTEMMA PERUVIANUM. *Cinchona Peruviana.* Colder parts of Peru.

Bark very bitter, sweetish, smell nauseous. (L.)

EXOSTEMMA SOUZANUM. Brazil.

According to Guibourt, this plant produces an excessively bitter febrifugal bark, called *Quinquina de piautri*. It colours the saliva yellow, and is said to contain cinchonine; Buckner found in it an alkali, which he called *Esenbeckine*, upon the erroneous supposition that the bark belonged to *Esenbeckia febrifuga*. (L.)

GALIUM. (De Cand. iv. 593.)

*GALIUM APARINE. (E. B. 816.) *Aparine, Cleavers, Goose grass.*

Fl. white. June, July. Annual. Hedges. Very common.

*GALIUM ULIGINOSUM. (E. B. 1972.) *Mollugo montana, Rough marsh bedstraw.*

Fl. white. August. Perennial. Sides of ditches. Common.

*GALIUM VERUM. (E. B. 660.) *Cheese renning bedstraw, Yellow bedstraw.*

Fl. yellow. July, August. Perennial. Dry banks in sandy soil. Common.

Vulnerary, infusion used to curdle milk; roots dye a red colour. (G.) Flower stalks used as a yellow dye, and employed for colouring Cheshire cheese. (O'Sh.)

*GALIUM MOLLUGO. (E. B. 1673.) *Rubia sylvestris lævis, Great hedge bedstraw, Wild madder.*

Fl. white. July, August. Perennial. Hedges and thickets. Common.

GALIUM SYLVATICUM. Most parts of Europe.

The roots of this and of the preceding species dye red, herbs opening.

*GALIUM CRUCIATUM. *Cruciata, Valantia cruciata, Cross-leaved bedstraw, Crosswort.*

Fl. yellow. May, June. Perennial. Hedge-banks and thickets.

Root used in dyeing.

GARDENIA. (De Cand. iv. 379.)

GARDENIA CAMPANULATA. East Indies.

Fruit cathartic and anthelmintic. (Roxb.)

GARDENIA GUMMIFERA. Ceylon, Coromandel.

Exudes a gum resin like elemi.

GENIPA. (De Cand. iv. 378.)

GENIPA AMERICANA. West Indies.

Berry eatable.

GEOPHILA. (De Cand. iv. 537.)

GEOPHILA MACROPODA. *Psycotria macropoda.* South America.

Emetic.

GEOPHILA RENIFORMIS. *Cephaelis reniformis, Psycotria herbacea.* Hotter parts of America.

Root emetic, substituted for ipecacuanha. (L.)

Hydrophilax. (De Cand. iv. 576.)

Hydrophilax maritima. Malabar and Coromandel.

Fibres of the roots, *Muddi awl,* imported from the East Indies; used for dyeing reds and browns.

Hymenodictyon. (De Cand. iv. 358.)

Hymenodictyon excelsum. *Cinchona excelsa.* East Indies.

The two inner layers of bark possess the bitterness and astringency of Peruvian bark; the bitterness is not so quickly communicated to the taste on chewing the bark, but is much more durable, especially about the upper part of the fauces. (L. ex Roxb.)

Isertia. (De Cand. iv. 437.)

Isertia coccinea. *Guettarda coccinea.* Guayana.

Bark very bitter. (G.) A decoction of the leaves employed by the creoles as a fomentation to cure swellings; bark febrifugal. (L.)

Manettia. (De Cand. iv. 362.)

Manettia cordifolia. *M. glabra.* Buenos Ayres, &c.

Bark of root considered a valuable remedy in dropsy and dysentery; given in powder, dose ʒss. to ʒiss., acts as an emetic. (L.)

Morinda. (De Cand. iv. 446.)

Morinda citrifolia. *Bancudus latifolius, Cada pilava,* Morinda umbellata. India.

Fibres of the roots, *Muddi awl,* imported from the East Indies; used for dyeing reds and browns.

Nonatelia. (De Cand. iv. 466.)

Nonatelia officinalis. Cayenne and Guayana.

Pectoral in infusion. (G.)

All the parts, when bruised, give out a slight aromatic odour. The creoles call it *Azier á l'asthme,* because they find an infusion of the leaves an excellent remedy for asthma. (L.)

Oldenlandia. (De Cand. iv. 424.)

Oldenlandia umbellata. Java, Coromandel.

Root, *Chay root,* used in dyeing. (G.)

Leaves expectorant. (L.)

Employed in Coromandel to dye an excellent red on cotton cloth. (O'Sh.)

Ophiorhiza. (De Cand. iv. 415.)

Ophiorhiza mungos. Java, Ceylon, Sumatra.

The parts are so intensely bitter that it is called by the Malays *Earth gall;* it has the reputation of being a most powerful alexipharmic, but this requires confirmation. (L.)

Has high reputation as a remedy for snake-bites; but Roxburgh altogether discredits its supposed virtues. (O'Sh.)

PÆDERIA. (De Cand. iv. 471.)

PÆDERIA FŒTIDA. *Apocynum fœtidum*, *Convolvolus fœtidus.* East Indies, Japan.

Leaves, very fœtid and alliaceous; used to impregnate baths, and in decoction are administered internally in retention of urine, and in certain febrile complaints. Root employed as an emetic. (L. ex Roxb.)

PALICOUREA. (De Cand. iv. 524.)

PALICOUREA CROCEA. *Psychotria crocea.* West Indies. Emetic.

PALICOUREA MARCGRAVII. *Galvania vellozii*, *Ervado rato.* Brazil.

A poisonous plant, used to kill rats and mice.

PALICOUREA OFFICINALIS. Brazil.

In small doses powerfully diuretic; used both in human and veterinary medicine. (L.)

PALICOUREA DIURETICA. (Mart.) P. STREPEUS. (Mart.) P. SONANS. (Mart.) And P. LONGIFOLIA. (H. B. K.,) are said to have similar properties.

PALICOUREA SPECIOSA. *Douradinha da Campo.* New Granada, Brazil.

Leaves antisiphilitic. (G.)

The decoction, which in large doses is poisonous, acts especially by an increased action of the skin and kidneys, and the digestion is not hindered by moderate doses. (L. ex Martius.)

PALICOUREA SULPHUREA. *Psychotria sulphurea.* Peru.

Extremely bitter; yields a fine yellow tincture, used as a tonic.

PATTIBEA. (De Cand. iv. 537.)

PATTIBEA COCCINEA.

One of the plants, the fibres of whose roots, under the name of *Muddi awl*, are imported from the East Indies, and employed in dyeing reds and browns.

PINKNEYA. (De Cand. iv. 366.)

PINKNEYA PUBENS. *Cinchona Caroliniana*, *P. pubescens.* South Carolina and Florida.

Bark febrifugal, and used in Carolina as a substitute for cinchona. (L.)

PSYCHOTRIA. (De Cand. iv. 504.)

PSYCHOTRIA EMETICA. *Cephaelis emetica.* New Granada.

Root, *Brown ipecacuanha*, *Ipecacuanha noir*, *Ipec. non annelé*; emetic; contains nine per cent. of emetine. (G.) It is the *striated ipecacuanha* of Guibourt, Pereira, &c.; the *black* or *Peruvian ipecacuanha* of others. (L.)

Psychotria noxia. Brazil.

Is a reputed poison. (L.)

Randia. (De Cand. iv. 384.)

Randia dumetorum. *Canthium coronatum*, *Gardenia dumetorum*, *G. spinosa*, *R. spinosa.* Coast of Coromandel.

Root, *Malabar ipecacuanha*, emetic. (G.) The fruit, when bruised and thrown into water, intoxicates or even kills fish, which are not considered less wholesome in consequence; in the form of powder, it is a powerful emetic; an infusion of the bark of the root is employed to nauseate in bowel complaints. (L.) O'Shaughnessy states, that the fruit was carefully examined during a search made by himself and others for an efficient substitute for ipecacuanha; the result was, the opinion, that little or no dependence can be placed on it as an emetic remedy.

Randia ruiziana. *Gardenia longiflora.* South America.

Berry eatable.

Remijia. (De Cand. iv. 357.)

Remijia ferruginea. *Cinchona ferruginea.* Brazil.

Remijia vellozii. *Cinchona vellozii.* Brazil.

These are substituted in Brazil for cinchona bark under the names of *Quina de serra*, or *Quina de remijo*, but are said to be of inferior quality. (L.)

Richardsonia. (De Cand. iv. 467.)

Richardsonia rosea. *R. emetica.* Brazil.

Von Martius speaks highly of the excellence of the root of this plant, as an agreeable emetic, in doses of one or two drachms. (L.)

Richardsonia scabra. *R. Braziliensis.* Brazil.

Root, imported as a substitute for ipecacuanha, and forms the *undulated*, *amylaceous*, or *white ipecacuanha* of pharmaceutical writers. It does not contain, according to Pelletier, more than six per cent. of emetine.

Rubia. (De Cand. iv. 588.)

Rubia mungista. *R. mangith.* Bengal.

Root, *Bengal madder*, *Mungeet*, employed in dyeing.

Rubia tinctorum. *Madder.* South of Europe.

Root, *madder*, *grappe*, *meekrappe*, *lizari*, *rubiæ radix*, slightly astringent, diuretic, emmenagogue, and aperitive; used in the rickets; dose in powder ℈j. to ʒss.; chiefly used as a valuable dyeing root, dyes red. (G.) The roots of both of these contain a red colouring matter, *Alizarin*, (Robiquet), and also a yellow colouring matter, *Xanthine*, (Kuhl.) The former occurs in orange red crystals, tasteless, inodorous, little soluble in cold, but soluble in boiling water; also in alcohol, ether, the fixed oils, and alkalies. A solution of alum added to a solution of alizarin, and precipitated by potash, gives a rose lake of the most charming tint. *Xanthine* is yellow, very soluble in water and in alcohol, slightly in ether; the solution passes to orange red by contact with alkalies, to lemon yellow by acids; it is inodorous, but has a sweetish bitter taste. (O'Sh.) According to Runge, there are no fewer than five colouring matters in madder, viz. *Madder purple*, (*purpurin*); *Madder red*, (*alizarin*); *Madder orange*; *Madder yellow* (*xanthin*); and *Madder brown*. He also mentions two colourless acids of madder, viz. *Maderic* and *Rubiacic acids*. (Pereira.) The bones of animals fed on madder are coloured red.

SHERARDIA. (De Cand. iv. 581.)

*SHERARDIA ARVENSIS. (E. B. 891.) *Herb sherard*, *Little field madder*.

Fl. blue. June, August. Annual. Cultivated fields. Common.

Qualities the same as those of galium. (G.)

SIDERODENDRON. (De Cand. iv. 478.)

SIDERODENDRON TRIFLORUM. *Iron wood*. South America. Bark diuretic, stomachic.

UNCARIA. (De Cand. 347.)

UNCARIA GAMBIR. *Nauclea gambir*. Indian archipelago. *Gutta gambir* is made from it. (G.) An extract, called *Gambier*, is prepared by the Malays from the leaves of this shrub; with some sweetness it has a more astringent taste than *Terra Japonica*; Roxburgh considered it one of the drugs, if not the only one, formerly called by that name in Europe. The extract is chewed by the natives with betel leaf and areca; the leaves are chewed to relieve aphthous eruptions of the mouth and fauces. Dr. Pereira considers this gambier not to form any of the kinos of the shops, but to be one of the substances called *catechu* in commerce. (L.)

VAUGERIA. (De Cand. iv. 454.)

VAUGERIA EDULIS. Madagascar, China.

Seeds like almonds.

ORDER 91. VALERIANEÆ. (De Cand. iv. 623.)

Tube of the *calyx* adnate to the ovary, limb either dentate or partite, or pappiform and involute; *corolla* tubular, infundibuliform, generally five-lobed, rarely 3—4 lobed, lobes obtuse, tube equal, or gibbous, or spurred at the base; *stamens* adhering by their filaments to the tube of the corolla, free at the apex, alternate with the lobes of the corolla, five, or by abortion, four, three, two, or one; *anthers* ovate, bilocular; *style* filiform; *stigmas* 2—3, free, or concreted into a single one; *fruit* membranous, or subnucamentaceous, indehiscent, crowned when young by the limb of the calyx, either one or three celled, two being empty; *seeds* in the fertile cell solitary, pendulous, exalbuminous; *embryo* straight;

radicle superior; *cotyledons* flat. Annual or perennial *herbs*, the latter having strong-scented roots; *leaves* opposite, exstipulate, varying much in shape, not only in different species, but also in the same individual; *flowers* cymo corymbose.

Centranthus. (De Cand. iv. 631.)

*Centranthus ruber. (E. B. 1532.) *Valeriana rubra, Red valerian.*

Fl. rose-coloured. June, July. Perennial. Chalk pits in Kent. Doubtful native.

Young shoots eaten as a salad.

Nardostachys. (De Cand. iv. 624.)

Nardostachys jatamansi. *Nardus indica, Patrinia jatamansi, Valeriana jatamansi*, Ναρδος ινδικη. (Dioscor.) *Spikenard.*

This, the true spikenard of the ancients, has been highly esteemed both as a perfume and as a stimulant medicine. Oriental writers give it as a remedy for a multitude of diseases, and it appears to be really valuable in hysteria and epilepsy. (L.)

Valeriana. (De Cand. iv. 632.)

Valeriana celtica. *Nardus celtica, Celtic nard.* Alps, France, and Italy.

Roots much esteemed in the Levant as a cosmetic and perfume. (O'Sh.)

Valeriana montana. *Mountain valerian.* Mountainous parts of Europe.

Roots of this and the former species aromatic; used in hysteria and epilepsy. (G.)

*Valeriana dioica. (E. B. 628.) *Phu minus, Small marsh valerian.*

Fl. white, tinged with red. Perennial. Marshy meadows. Common.

Root an active tonic, exhibited in spasmodic diseases.

Valeriana dioscoridis. (*Fl. Græc.*) φου. (Dioscorid.) Near Limysus in Lycia.

According to Sibthorp this is the real *Phu* of Dioscorides, and therefore the most powerful of the Valerians, for which V. officinalis is to be merely considered the northern substitute. De Candolle refers the species to V. sisymbriifolia of Desfontaines, an oriental plant: but this does not appear to be certain, and the former learned botanist was not personally acquainted with the subject. (L.)

Valeriana hardwickii. Mountains in north of India.

The thick, fleshy, strongly scented root used in medicine in Nepal and the north of India. (Royle.)

*Valeriana officinalis. (E. B. 698.) *V. sylvestris, Officinal valerian, Wild valerian.*

Fl. pale flesh-colour. June, July. Perennial. Ditches and sides of rivers. Common.

The aromatic, or rather fœtid roots, are stimulant, not only acting upon the secretions, but producing a specific influence over the cerebro-spinal system, bringing on, as is well known, a kind of intoxication in cats, and in large doses occasioning in man scintillations, agitation. and even convulsions; it is chiefly employed in asthenic fevers, epilepsy, chorea, hysteria, and as an anthelmintic. (L.)

VALERIANA PHU. *Phu, Valeriana major. Great valerian.* Alps of Switzerland, &c.

Root an active tonic, used in spasmodic diseases.

VALERIANELLA. (De Cand. iv. 625.)

*VALERIANELLA OLITORIA. (E. B. 811.) *Fedia olitoria, Valeriana locusta, Corn salad, Lamb's lettuce.*

Fl. blue. April, June. Annual. Banks and corn-fields. Common.

Young shoots eaten as a salad.

ORDER 92. DIPSACEÆ. (De Cand. iv. 643.)

Tube of the *calyx* adherent to the ovary, limb in the form of a variously-divided pappus, often surrounded by a scariose involucel; *corolla* gamopetalous, tubular, inserted into the upper part of the calyx; *limb* oblique, 4—5 cleft; *stamens* four, inserted into the tube of the corolla, alternate with its lobes, and distinct; *style* filiform; *ovary* one-celled, one-seeded, generally covered by the involucel; *seed* pendulous; *albumen* fleshy; *embryo* straight; *radicle* superior; *flowers* in dense heads, very rarely in verticels.

DIPSACUS. (De Cand. iv. 645.)

*DIPSACUS FULLONUM. (E. B. 2080.) *Carduus fullonum, Dipsacus sativus, Fuller's teasel, Fuller's thistle.*

Fl. pale purple. July, August. Biennial. Waste places. Doubtful native.

Root bitter and tonic.

*DIPSACUS SYLVESTRIS. (E. B. 1032.) *Labrum veneris, Wild teasel.*

Fl. purple. July. Biennial. Road sides and ditches. Common.

Roots antiscrofulous, and in wine, diuretic.

KNAUTIA. (De Cand. iv. 650.)

*KNAUTIA ARVENSIS. (E. B. 659.) *Scabiosa, S. arvensis, Field scabious.*

Fl. blueish. July. Perennial. Pastures and corn-fields. Common.

Leaves depurative, used in diseases of the skin, of the lungs, and in quinsy.

SCABIOSA. (De Cand. iv. 654.)

SCABIOSA SUCCISA. (E. B. 878.) *Succisa, Morsus diaboli, Devil's bit.*

Fl. violet, or dark blue. July, August. Perennial. Meadows and pastures.

Roots used in syphilis and scrofula. (G.)

ORDER 93. COMPOSITÆ. (De Cand. v. 4.)

Calyx superior, closely adhering to the ovary, its limb entire, membranous, toothed and formed of scales or hairs called pappus; *corolla* monopetalous, superior, either ligulate, or tubular, and 4—5 toothed; *stamens* usually five, filaments distinct; *anthers* cohering into a cylinder (syngenesious); *ovary* inferior, one-celled; *style* simple, passing through the tube of the anthers; *stigma* bifid; *fruit* consisting of an achene and calyx, closely connected, and enclosing the embryo; the achene one-celled, articulated on the receptacle, generally sessile, rostrate, or not rostrate at the apex; *seed* attached to the base of the fruit by a very short funiculus; *embryo* erect; *radicle* short, straight, inferior; *plumula* inconspicuous; *florets* collected into dense heads, (capitules,) either all hermaphrodite, or the outer ones female or neuter, the inner being hermaphrodite, or male, or they are entirely composed of florets of distinct sexes; *capitules* with the florets sometimes all tubular, sometimes all ligulate, sometimes the central florets are tubular and the outer ones ligulate; *involucre* of one or many rows, of more or less united scales, surrounding the receptacle. *Herbs* or *shrubs*, rarely *trees*, forming almost a tenth part of the vegetable kingdom; *leaves* simple, alternate, or opposite.

ACHILLEA. (De Cand. vi. 24.)

ACHILLEA AGERATUM. *Ageratum, Eupatorium mesues, Sweet maudlin.* South of Europe.

Stomachic, cordial, cephalic.

ACHILLEA MILLEFOLIUM. (E. B. 758.) *Millefolium, Milfoil, Yarrow.*

Fl. white, sometimes rose-coloured. June, September. Perennial. Dry hilly pastures.

ACHILLEA NOBILIS. *Showy Milfoil.* South of Europe.

Astringent, tonic, and vulnerary,-used in hæmorrhages, and externally in headache, tumours, &c.; added to beer to render it more intoxicating, and lately recommended to smokers in lieu of tobacco; root warm, used for contrayerva; Dr Stokes, of Dublin, has found milfoil useful in dropsies.

ACHYROPHORUS. (De Cand. vii. 92.)

*ACHYROPHORUS MACULATUS. (E. B. 225.) *Hypochæris maculata, Herba costa, Hungarian hawk weed, Spotted cat's ear.*

Fl. deep yellow. July. Perennial. Open chalky and limestone pastures.

Used in pulmonary affections, and pains of the side.

ADENOSTYLES. (De Cand. v. 203.)

ADENOSTYLES GLABRA. *Cacalia alpina*, *C. glabra*. Alps of France, Italy, &c.

The leaves have been recommended in coughs. (L.)

AMBROSIA. (De Cand. v. 525.)

AMBROSIA MARITIMA. South of Europe.

Cardiac, cephalic, astringent.

ANACYCLUS. (De Cand. vi. 15.)

ANACYCLUS PYRETHRUM. *Anthemis pyrethrum*, *Chamæmelum specioso flore radice fervente*. (Shaw.) *Pellitory of Spain.* Barbary, &c.

The root is imported from the Levant under the name of *Pellitory of Spain.* It is brownish externally, whitish internally; its taste is hot, acrid, and permanent, depending on a fixed acrid oil, deposited in vesicles in the bark; this oil renders the root a powerful rubefacient and stimulant. It is principally employed as a masticatory in rheumatic affections of the face, or in the form of tincture in the toothache. Sometimes gargles are made of it, and used in relaxations of the uvula. Internally it has been taken as a gastric stimulant. (L. *ex* Pereira.) The powder is used in large quantities by the Mahometans to excite transpiration, being rubbed on the skin; it is also used internally as a cordial and stimulant in lethargy and palsy, and in certain stages of typhus fever. (Ainslie.) The root is pickled while young as a sauce. (G.)

ANACYCLUS RADIATUS. *Anthemis valentina*, *Buphthalmum*, *Ox-eye.* South of Europe.

Vulnerary, aperitive, dyes a good yellow. (G.)

ANTHEMIS. (De Cand. vi. 4.)

ANTHEMIS ARVENSIS. (E. B. 602.) *Corn chamomile*, *Wild chamomile.*

Fl. disk yellow, ray white. July. Biennial. Corn fields.

***ANTHEMIS NOBILIS.** (E. B. 980.) *Chamæmelum*, *Common chamomile.*

Fl. disk yellow, ray white. August. Perennial. Dry heaths.

Chamomile heads, in the shops called *flowers*, contain a volatile oil, resin, and bitter extractive; the oil and resin render them stimulant, while the bitter extractive communicates tonic properties; the warm infusion is used externally as a fomentation, and internally to promote vomiting; the cold infusion, or the extract, is taken as a tonic, in any cases in which tonic substances are indicated, as dyspepsia. (Pereira.) Chamomile in substance has, in some instances, proved useful in intermittents; Dr. Schall affirms that it is not only an effectual preventative of nightmare, but the sole certain remedy for that complaint. (Burnett.)

*ANTHEMIS TINCTORIA. (E. B. 1472.) *Ox eye chamomile.* Fl. yellow. July, August. Perennial. Durham, Essex. Flowers dye a good yellow.

ARNICA. (De Cand. vi. 316.)

ARNICA MONTANA. *Doronicum montanum, German leopard's bane, Mountain tobacco.* Meadows of the cooler part of Europe.

Root discussive; leaves attenuant, diaphoretic, and diuretic; in large doses they induce vomiting, until the stomach is used to them. The emetic action of Arnica was found by M. Dupuytren to depend on particles of down which remain suspended in the infusion; hence the necessity of filtering. Much used in bruises from falls; flowers have been substituted for Peruvian bark in intermittents and gangrenes. In their effects the flowers are stimulating, and when administered in small doses, they are very beneficial in raising the pulse, in exciting the action of the entire sanguiferous system, in checking diarrhœas, and particularly in removing paralytic affections of the voluntary muscles; they have also been recommended in chronic rheumatism, in retention of urine from paralysis of the bladder, and in amaurosis. (G.) It is said to owe its noxious qualities to the presence of cytisine. The activity of Arnica seems, however, to have been exaggerated. It has been recommended in the cure of putrid fever, ague, palsy, amaurosis, &c. &c., and on the continent is called *Panacea lapsorum.* (L.)

ARONICUM. (De Cand. vi. 319.)

ARONICUM SCORPIOIDES. *Arnica scorpoides, Doronicum radice dulci, Creeping leopard's bane.* Alps of Europe.

Roots aromatic, used by sportsmen in Alpine countries against giddiness.

ARTEMISIA. (De Cand. vi. 92.)

**ARTEMISIA ABROTANUM. *Abrotanum mas, Old man, Southern wood.* Native of south of Europe.

Fl. yellowish. September. Small shrub. Gardens.

Tops discussive, antiseptic, vermifuge and tonic. (G.) A powerful anthelmintic. (L.)

*ARTEMISIA ABSINTHIUM. (E. B. 1230.) *Absinthium vulgare, Common wormwood.*

Fl. dingy yellow. August. Perennial. Waste places on chalky soil.

Bitter, stomachic, excites the appetite, promotes digestion, antiseptic, and vermifuge; it was recommended by Haller for keeping off fits of the gout, for which it is said to have served the Emperor Charles V. This plant is thought to drive away insects from clothes and furniture, for which purpose it is often laid into drawers and chests in the country. A very bitter alkali, called *absinthium*, has been obtained from it. Brewers are said to add the fruit to their hops, to render beer more heady, and rectifiers to their spirits.

*ARTEMISIA CAMPESTRIS. (E. B. 338.) *Artemisia, Fine-leaved mugwort, Field southernwood.*

Fl. dusky yellow. August. Perennial. Dry sandy heaths. Rare.

Herb astringent, antiseptic, discutient.

ARTEMISIA DRACUNCULUS. *Dracunculus hortensis, Tarragon.* All the north of Russia in Asia.

Excites the appetite and the menses; heating; carminative; eaten as a potherb, and communicates a peculiar fine flavour to vinegar and to mustard. (G.) The inspissated juice of the leaves considered by many a powerful sudorific. (O'Sh.)

ARTEMISIA INDICA. Nepal, China, Japan.

Leaves slightly aromatic and bitter, considered in India as a powerful deobstruent and antispasmodic. (L.) Substituted for A. absinthium, but weaker. (O'Sh.)

ARTEMISIA JUDIACA. Syria, Egypt.

The seeds, *Worm seeds*, *Semen contra*, *S. cinæ*, used as a vermifuge, in doses of gr. x. to ʒss., three or four times a day; they are also stomachic; tansey seeds are substituted for them. (G.) *vide A. siebieri.*

ARTEMISIA MARITIMA. (E. B. 1706, and 1101, vars. α and β.) *Absinthium maritimum*, *Common roman wormwood, Sea wormwood.*

Fl. yellow. September. Perennial. Sea shores.

Properties the same as those of A. absinthium.

ARTEMISIA MOXA. *Absinthium moxa, Moxa weed.* China.

Described by Gray as *A. sinensis*, and *A. maderaspatana.* Down of the leaves, *Moxa*, formed into small cones, is burned on the place affected in gout, rheumatism, diseases of the joints, &c. (G.) It is from the woolly leaves of this, and not A. Chinensis, that the Chinese prepare their moxa; this substance, employed as a convenient means of applying the actual cautery, is, however, obtained from many other plants. (L.)

ARTEMISIA PONTICA. *Absinthum Romanum, True Roman wormwood.* South Europe.

ARTEMISIA RUPESTRIS. *Absinthium rupestre, Alpine wormword.* Aland, Siberia.

Properties like those of A. Judiaca. (G.) The latter is much esteemed as an application to injured parts, and also taken internally, and supposed to be tonic and diaphoretic. (O'Sh.)

ARTEMISIA SANTONICA. *Santonicum.*

Properties the same as those of A. Judiaca.

ARTEMISIA SIEBIERI. *A. contra, A. glomerata.* Palestine.

According to Batka, this produces the substance called

Semencontra, or *Barbotine*, a strong aromatic bitter drug imported from Aleppo and Barbary as a vermifuge; it is employed in powder, in aqueous infusion, or in syrup; its most active principle is obtained by distillation, in the form of a yellow volatile oil, which is lighter than water, and has a strong penetrating odour. (L.) (See Artemisia judiaca.)

*ARTEMISIA VULGARIS. (E. B. 978.) *Artemisia, mugwort.*

Fl. whitish-yellow. August. Perennial. Hedges; common.

Tops active uterines, employed in decoction and as a bath; mixed with rice and sugar, are by the Chinese women used as a pessary. (G.)

Besides these, the following have been employed medicinally. A. PROCERA, A. ARBORESCENS, A. GLACIALIS, A. SPICATA, and A. VALLESIACA.

ASTER. (De Cand. v. 226.)

ASTER AMELLUS. *Star wort.* Middle and south of Europe.

Leaves discussive, vulnerary, resolvent, and useful in angina.

ATRACTYLIS. (De Cand. vi. 549.)

ATRACTYLIS HUMILIS. South Europe.

Analogous to *Cnicus benedictus*. Flowers coagulate milk.

BACCHARIS. (De Cand. 398.)

BACCHARIS CONCAVA. South America.

Leaves dye a black colour.

BACCHARIS DEPENDENS. South America.

BACCHARIS EMARGINATA. South America.

BACCHARIS OBLONGIFOLIA. South America.

Vulnerary and consolidant.

BACCHARIS GENISTELLOIDES. *Conyza genistelloides, Molina reticulata.* Peru and Brazil.

This and B. venosa, a nearly allied species, are called in Brazil *Carqueja dolce*, and *C. amarga*, on account of the quantity of bitter extractive matter they contain, and which is combined with a specific aroma; they are particularly useful in all intermittent fevers, and for all disorders in which Artemisia is employed in Europe. Both the extract and the decoction are used; it is particularly serviceable in chronic diseases of horses, which are very fond of this herb. (L. *ex Martius.*)

BACCHARIS PROSTRATA. South America.

Decoction used in dysury.

BELLIS. (De Cand. v. 304.)

*BELLIS PERENNIS. (E. B. 424.) *Bellis minor, Consolida minima, Day's eye, Daisy.*

Fl. with a white ray, in cultivated varieties, red, or variegated, and all semi-ligulate. April, October. Perennial. Pastures.

Root antiscrofulous; leaves in salads open the body; used in vulnerary fomentations.

BIDENS. (De Cand. v. 593.)

*BIDENS TRIPARTITA. (E. B. 113.) *Eupatorium cannabinum fœminum, Trifid burr marygold, Water hemp agrimony.*

Fl. yellowish. July. Annual. Wet places. Common.

Strong smelling, hepatic, vulnerary. (G.) The whole plant is acrid, and when chewed, excites salivation powerfully. (L.)

BIDENS CHRYSANTHEMOIDES. *Coreopsis bidens.* Carolina.

Has the same properties. (L.)

CALCA. (De Cand. v. 671.)

CALCA JAMAICENSIS. *Halbert weed.* West India islands.

The leaves contain a powerful bitter, and steeped in wine or brandy, form a stomachic medicine in the West Indies; it is, however, not certain that this account does not rather apply to Neurolæna lobata. (L.)

CACALIA. (De Cand. v. 327.)

CACALIA KLEMIA. India.

Decoction of the leaves given in rheumatism, syphilis, and lepra, and in similar cases to those in which sarsaparilla is given by European practitioners. (O'Sh.)

CALENDULA. (De Cand. vi. 451.)

CALENDULA ARVENSIS. *C. caltha. Field marygold, Wild marygold.* South of Europe.

Herb cordial.

**CALENDULA OFFICINALIS. *Common marygold.*

Fl. yellow. Annual. Native of south of Europe.

Flowers cordial, hepatic, diaphoretic, and emmenagogue. (G.) Formerly much employed as a carminative, now chiefly used to adulterate saffron. (L.)

CARLINA. (De Cand. vi. 545.)

CARLINA ACANTHIFOLIA. *Chamæleon albus.* South of Europe.

Receptacle esculent.

CARLINA GUMMIFERA. *Atractylis gummifera.*

Analogous to Cnicus benedictus; flowers coagulate milk.

CARLINA SUBACAULIS. *Carlina, C. acaulis, C. chamæleon, Carline thistle.* Mountains in Europe.

Root restorative; useful after great fatigue, when proper refreshments cannot be procured; formerly in common use with military men and foot travellers.

*CARLINA VULGARIS. (E. B. 1144.) *Carline thistle, Prickly carline thistle.*

Fl. purplish, with a yellow ray of scales. June. Biennial. Dry hilly pastures.

Diuretic and diaphoretic; the dried calyx may serve as a hygrometer; in fine weather it opens horizontally, and is even sometimes reflexed, on the contrary, in wet weather, it is closed.

CARTHAMUS. (De Cand. vi. 621.)

CARTHAMUS TINCTORIUS. *Carthamus, Cnicus tinctorius, Bastard saffron, Dyer's saffron.* East Indies.

Flowers, *Safflower*, used to colour broths, also in dyeing, and to adulterate saffron; the East Indian is oiled; seeds, *Parrots' corn*, purgative, emetic, yields oil. (G.) The most lovely tints are imparted by this dye to silk and cotton; *rouge* is a mixture of the dry carthamic acid and finely-powdered talc. The *pink saucers* used for giving a flesh tint to silk are prepared from this dye, with a small portion of soda. The Chinese *card rouge* is a carthamate of soda, colourless when applied, but being decomposed by the acid secreted by the skin, produces a most beautiful rosy tint. (O'Sh.)

CATANANCHE. (De Cand. vii. 83.)

CATANANCHE CŒRULIA. *Blue gum succory.*

Similar to wild succory.

CENTAUREA. (De Cand. vi. 565.)

CENTAUREA BEHEN. Persia.

Root, *White ben, Ben album, Rhapontic blanc, Rhubarbe indigène, Rhaponticum behen*, used for rhubarb; very astringent. (G.) Has similar properties to C. calcitrapa. (L.) A bitter tonic; used for seasoning among the Persians. (O'Sh.)

*CENTAUREA CALCITRAPA. (E. B. 125.) *Calcitrapa, Carduus stellatus, Star thistle.*

Fl. rose-coloured. July, September. Perennial. Gravelly and sandy places.

Root diuretic, deobstruent, lithontriptic; leaves alexiterial in infusion; seeds diaphoretic. (G.) Has been used as a febrifuge, and has even been preferred to gentian. (L.)

CENTAUREA CENTAURIUM. *Centaurium majus, Great centaury.* Alps, Italy.

Root vulnerary, astringent, antidysenteric. (G.) Has similar properties to C. calcitrapa. (L.)

*CENTAUREA CYANUS. (E. B. 277.) *Cyanus segetum, Corn blue-bottle.*

Fl. of disk purple, of the ray blue. July, September. Annual. Corn fields.

Flowers cooling, astringent, make a fine blue wash colour. (G.) The distilled water was once so esteemed as an application to weak eyes, that the plant received the popular appellation of *Casse lunette*, or *Break your spectacles*. The fine azure colour prepared from the petals, is much used by miniature painters. (O'Sh.)

*CENTAUREA JACEA. (E. B. 1678.) *Jacea nigra, Matfellon, Brown radiant knapweed, Knapweed.*

Fl. purple. August, September. Perennial. Waste places. Sussex.

Flowers cooling, astringent.

CENTAUREA MONTANA. *Cyanus major, Great blue-bottle, Mountain knapweed.*

Fl. of disk purple, of ray blue. June, August. Perennial. Native of the Alps.

Properties similar to those of C. cyanus.

*CENTAUREA SOLSTITIALIS. (E. B. 243.) *Calcitrapa, St. Barnaby's thistle, Yellow star thistle.*

Fl. yellow. July, September. Annual. Borders of fields.

Herb and seed opening, deobstruent.

CENTAUREA STÆBE. South Europe.

Flowers cooling, astringent.

CEPHALOPHORA. (De Cand. v. 661.)

CEPHALOPHORA GLAUCA. *Santolina tinctoria.* South America.

Affords a yellow dye.

CHAMÆPEUCE. (De Cand. vi. 657.)

CHAMÆPEUCE CASABONÆ. *Acarna, Carduus casabona, Fish thistles.* Europe.

Eaten as a potherb while young.

CHONDRILLA. (De Cand. vii. 141.)

CHONDRILLA JUNCEA. *Rushy gum succory.* North Europe.

Laxative, diuretic, used in dropsy.

CHRYSANTHEMUM. (De Cand. vi. 63.)

CHRYSANTHEMUM CORONARIUM. *Chrysanthemum dioscoridis, Garden Chrysanthemum.* South of Europe.

Flowers used to discuss steatomatous tumours.

*CHRYSANTHEMUM SEGETUM. (E. B. 540.) *Corn Chrysanthemum.*

Fl. yellow. June, August. Annual. Corn fields.

Discussive and attenuant when used externally; and given against the jaundice, asthma, and shortness of breath.

CICHORIUM. (De Cand. vii. 83.)

**CICHORIUM ENDIVIA. *Cichorium, Seris, Garden endive.*

Fl. blue. August, September. Annual. Native of India.

Roots used as a potherb; blanched stem as a salad and potherb.

*CICHORIUM INTYBUS. (E. B. 539.) *C. agreste, Wild succory.*

Fl. blue. July, August. Perennial. In gravelly and chalky soils.

Aperitive, hepatic, attenuant, used in fevers: root used for coffee. (G.) The root is said to be tonic, and in large doses aperient; it has been used in chronic, visceral, and cutaneous diseases, especially in the form of a decoction. (Pereira.) The root is extensively cultivated, especially in France, as a substitute for coffee; when full grown it is cut into dice, roasted, and ground down, when it cannot be distinguished by the eye from that substance; it agrees with it also in taste, but wants the pleasant aroma. The French maintain that the quality of coffee is improved by the addition of succory root, if not in too large a quantity. It certainly affords a most harmless means of adulterating it. (L.)

CIRSIUM. (De Cand. vi. 634.)

CIRSIUM ERIOPHORUM. *Carduus eriophorus, Cnicus eriophorus.* South of Europe.

Used in schirrhous tumours.

CIRSIUM LANATUM. *Cnicus lanatus, atractylis, Distaff thistle.* East Indies.

Root depurative.

CIRSIUM LANIFLORUM. *Carduus eriophorus. Cnicus laniflorus, Woolly-headed thistle. Friar's crown.* South of Europe, Persia.

Receptacle eaten as artichokes.

CIRSIUM MONSPESSULANUM. *Carduus monspessulanus, Melancholy thistle.* South of France, Spain.

Root bound on varices to assuage the pain of them.

CNICUS. (De Cand. vi. 606.)

CNICUS BENEDICTUS. *Carduus benedictus, Centaurea benedictus, Calcitrapa lanuginosa.* South of Europe, Persia.

Root diuretic, deobstruent, lithontriptic; leaves alexiterial in infusion, seeds diaphoretic. (G.) Once much used as a febrifuge, although now neglected. Mr. Burnett says that its properties are such as to lead us to a belief that it has been superseded by other not more efficacious remedies. (L.) Herb tonic and mildly diaphoretic; decoction causes vomiting; seeds diaphoretic. The cold infusion is employed as a tonic in debilitated conditions of the stomach. Taken warm in bed, the infusion has been given as a sudorific in various chronic diseases. The decoction has been employed to promote the operation of emetics. (Pereira.)

CYNARA. (De Cand. vi. 620.)

CYNARA CARDUNCULUS. *Chardoon.* South of France, &c.

Aperitive, diuretic, and aphrodisiac; flowers used to curdle milk; petioles and ribs of the leaves eaten as potherbs. (G.)

**CYNARA SCOLYMUS. *Cinara, Scolymus, Artichoke.*

Fl. purplish blue. August, September. Perennial. Native of the south of Europe.

Receptacle and base of the calyx scales eaten as a potherb; the bottoms are preserved in brine; infusion of the flowers used in rennet. (G.)

Diotis. (De Cand. vi. 34.)

*Diotis candidissima. (E. B. 141.) *D. maritima*, *Athanasia maritima*, *Gnaphalium legitimum*, *Santonica maritima*, *Cotton weed.*

Fl. yellow. August, September. Perennial. Sandy sea shores, south of England.

Vermifuge; used to drive away insects from wardrobes.

Doronicum. (De Cand. vi. 320.)

*Doronicum pardalianches. (E. B. 2654.) *D. romanum*, *Great leopard's bane.*

Fl. yellow. June, July. Perennial. Mountains in the north of England.

*Doronicum plantagineum. (E. B. 630.) *D. minus*, *Plantain-leaved leopard's bane*, *Small leopard's bane.*

Fl. yellow. June, July. Perennial. Road sides. Salinghall, Essex.

Roots aromatic, used by sportsmen in alpine countries against giddiness.

Echinops. (De Cand. vi. 522.)

Echinops ritro. *Ritro*, *Little globe thistle.* South of Europe.

Root astringent.

Echinops sphærocephalus. *Crocodilion*, *Globe thistle.* South of Europe.

Root used internally in bleeding of the nose; seed diuretic.

Echinops strigosus. Spain, Portugal.

The down of the flower and the woolly leaves, *Spanish tinder*, used in Spain as amadou.

Elephantopus. (De Cand. v. 86.)

Elephantopus scaber. East Indies.

A decoction of the leaves and roots are given on the Malabar coast in cases of dysuria. (L.)

Eclipha. (De Cand. v. 489.)

Eclipha erecta. West Indies, Asia Minor.

Juice used to dye the hair black.

Emilia. (De Cand. vi. 301.)

Emilia sonchifolia. *E. purpurea*, *Crassocephalum sonchifolium*, *Cacalia sonchifolia.* East Indies, China.

Decoction of the leaves used in India as a febrifuge. (L.)

Erigeron. (De Cand. v. 283.)

*Erigeron acre. (E. B. 1158.) *Blue flea bane*, *Fleabane.*

Fl. yellow in the disk, purple in the ray. August, September. Perennial. Gravelly and chalky pastures, and walls.

*ERIGERON CANADENSE. (E. B. 2019.) *Canadian flea bane.* Fl. yellowish white. August, September. Annual. Waste grounds and walls.

Are diuretic, lithontriptic, and vulnerary.

ERIGERON PHILADELPHIUM. *Philadelphia flea bane.* North America.

Said to be a powerful emmenagogue; commonly used in the United States as a diuretic. (L.)

EUPATORIUM. (De Cand. v. 141.)

EUPATORIUM AYAPANA. *Ayapana.* South America.

The infusion of this plant is said to be a powerful sudorific and alexipharmic; L. Heritier recommends it as an antidote against the bite of venomous serpents and malignant insects; for this purpose it is used in Brazil; a quantity of the bruised leaves, which is to be frequently changed, is laid on the scarified wound, and some spoonfuls of the expressed juice are from time to time administered to the patient, till he is found to be free from the symptoms, particularly the dreadful anxiety which follows the wounds of venomous reptiles. (Martius.) (L.)

*EUPATORIUM CANNABINUM. (E. B. 428.) *E. avicennæ, Hemp agrimony.*

Fl. pale reddish purple. July, August. Perennial. Banks of rivers.

Herb bitter, hepatic, aperitive, useful in catarrh, cough, and cachexy, also diuretic and vulnerary; root purgative, used for jalap. (G.)

EUPATORIUM PERFOLIATUM. *E. connatum, Boneset, Cross wort, Thorough root, Thorough wax, Thorough wort.* North America.

All the parts bitter, a decoction of the leaves the most active form; a valuable tonic stimulant; used as a substitute for Peruvian bark in the cure of intermittent fevers in the United States; in large doses, in warm infusion and decoction, emetic, sudorific, and aperient; a good substitute for chamomile-flowers in facilitating the operation of an emetic. (L.)

EUPATORIUM PURPUREUM. North America.

Root, *gravel root,* lithontriptic.

EUPATORIUM TEUCRIFOLIUM. *Wild horehound.* North America.

Astringent.

FILAGO. (De Cand. vi. 257.)

FILAGO ARVENSIS. South of Europe.

*FILAGO GERMANICA. (E. B. 946.) *Gnaphalium, Cudweed. Herb impious.*

Fl. scales yellowish, shining. July, August. Annual. Sandy and clayey pastures.

*FILAGO MINIMA. (E. B. 1157.) *Least cudweed.*

Fl. yellowish. July, August. Annual. Dry heaths.

FILAGO MONTANA. *Gnaphalium montanum.* France.

Roots, astringent and discussive.

GALINSOGA. (De Cand. v. 677.)

GALINSOGA PARVIFLORA. South America.

Vulnerary and antiscorbutic.

GLOSSOCARDIA. (De Cand. v. 631.)

GLOSSOCARDIA BOSWALLEA. *Verbesina boswallia.* East Indies.

Esculent, having the smell and taste of fennel.

GNAPHALIUM. (De Cand. vi. 221.)

*GNAPHALIUM LUTEO ALBUM. (E. B. 1002.) *Jersey cudweed.*

Fl. yellow. July, August. Annual. Jersey, Cambridgeshire, &c.

Tops used in obstructions and colds.

*GNAPHALIUM SYLVATICUM. (E. B. 913. Var. *a.*) *G. tomentosum, Highland cudweed.*

Flower scales shining, with broad brown border. August. Perennial. Thickets and pastures, Scotland.

Flowers used in the violent running of the nose in children; slightly astringent and diaphoretic.

GRANGEA. (De Cand. v. 372.)

GRANGEA MADERASPATANA. *Artemisia maderaspatana.* East Indies.

Leaves considered by the Indian doctors a valuable stomachic medicine; they are sometimes used in anodyne and antiseptic fomentations. (L.) Furnish moxa. (G.)

GUITZOTIA. (De Cand. 551.)

GUITZOTIA OLEIFERA. *Verbesina sativa, Kutrelloo, Kutsyelloo, Werinnua, Ramtill.* East Indies.

Seeds pressed for oil.

HIERACIUM. (De Cand. vii. 198.)

HIERACIUM GRONOVII. North America.

Leaves bruised used to destroy warts.

*HIERACIUM MURORUM. (E. B. 2082.) *Pulmonaria gallica, Golden lung wort, Wall hawkweed.*

Fl. yellow. July, August. Perennial. Woods, and on walls and rocks.

Herb cordial and pulmonary.

*HIERACIUM PILOSELLA. (E. B. 1093.) *Auricula muris, Common mouse-ear, Common mouse-ear hawkweed.*

Fl. lemon yellow. May, July. Perennial. Banks and dry pastures.

Leaves sternutatory, vulnerary, astringent.

HELIANTHUS. (De Cand. v. 585.)

**HELIANTHUS ANNUUS. *Common sunflower.*

Fl. very large, yellow. August, September. Annual. Native of Peru.

Seeds oily, used in emulsions; young shoots boiled are aphrodisiac; flowers yield turpentine.

**HELIANTHUS TUBEROSUS. *Jerusalem artichoke.*

Fl. yellow. August, September. Perennial. Native of the Brazils.

Cultivated for culinary purposes.

Roots nourishing, diuretic; give the smell of turpentine to the urine; flowers yield turpentine.

HELICHRYSUM. (De Cand. vi. 169.)

*HELICHRYSUM ARENARIUM. *Gnaphalium arenarium, Stæchas citrina Germanica, German golden locks, Sand helichrysum.*

Fl. yellow. July, September. Perennial. Native of the south of Europe.

Herbs and tops stimulant; used in palsy.

HELICHRYSUM ORIENTALE. *Chrysocome, Gnaphalium orientale, Oriental golden locks.* Island of Crete.

Root astringent.

HELICHRYSUM STŒCHAS. *Gnaphalium stœchas, Stœchas citrina, Eternal flower.* Sea-shores of south of Europe.

Tops used in obstructions and colds.

HOMOGYNE. (De Cand. v. 204.)

HOMOGYNE ALPINA. *Tussilago alpina, Alpine coltsfoot.* Alps, Europe.

Has similar properties to Tussilago farfara.

HYPOCHÆRIS. (De Cand. vii. 90.)

*HYPOCHÆRIS RADICATA. (E. B. 831.) *Achyrophorus radicatus, Hieracium officinale, Long-rooted cat's-ear, Long-rooted hawkweed.*

Fl. yellow. July. Perennial. Meadows and pastures.

Used in pulmonary affections and pains of the side.

INULA. (De Cand. v. 463.)

*INULA CONYZA. (E. B. 1195.) *Baccharis, Conyza, C. squarrosa, Ploughman's spikenard, Great fleabane.*

Fl. yellow. August, October. Perennial. Chalky and clayey soil.

Root and leaves used in ointments, against the itch and farcy; and in wine, against the jaundice.

INULA GRAVEOLENS. *Conyza minor vera, Erigeron graveolens, Small fleabane.* South of Europe.

Herb diuretic.

*INULA HELENIUM. (E. B. 1546.) *Enula campana, Helenium, Elecampane.*

Fl. yellow. July, August. Perennial. Moist pastures.

Root aromatic, slightly bitter, tonic, diaphoretic, stomachic; useful in asthma, hooping-cough, and in uterine and exanthematous diseases; externally antipsoric; a decoction of the root said to cure the scab in sheep. (G.) Various preparations of the boiled root, mixed with sugar, have been recommended to promote expectoration, and to strengthen the stomach; some think a spirituous extract contains most of its aromatic and tonic properties; this plant is generally kept in rustic gardens, on account of many traditional virtues; the root contains a white starchy powder called *Inuline*, a volatile oil, a soft acrid resin, and a bitter extractive. (L. ex Per.) A decoction of the root is much praised as an application in several cutaneous diseases, especially those attended with a troublesome itching. (O'Sh.)

INULA VISCOSUM. *Conyza major, Erigeron viscosum, Great fleabane.*

Herb suppurative.

KLEINIA. (De Cand. vi. 336.)

KLEINIA ANTIEUPHORBIUM. *Caculia antieuphorbium.* Cape of Good Hope.

Serves as an antidote to Euphorbium.

LACTUCA. (De Cand. vii. 133.)

LACTUCA ELONGATA. *Wild lettuce.* North America.

Herb narcotic.

LACTUCA PERENNIS. *Chondrilla prima, Gum succory.* Mountainous parts of Europe.

Herb restrains the menses.

**LACTUCA SATIVA. *Lactuca, Garden lettuce.*

Fl. yellow. August, September. Annual. Native country unknown.

Many varieties; has been substituted for opium in checking diarrhœa, allaying cough, and diminishing pain in rheumatism; leaves refreshing, slightly anodyne, laxative, antiphrodisiac. (G.) Yields a milk, which, when inspissated, resembles opium in appearance, smell, and effects; it has been said to procure calm and sleep, without some of the ill effects of opium; the drug is called officinally, *Thridace*, *Lettuce opium*, or *Lactucarium.* (L.)

*LACTUCA SCARIOLA. *Scariola, Italian lettuce, Prickly wild lettuce.*

Fl. yellow. August. Perennial. On waste ground.

*LACTUCA VIROSA. *Lactuca sylvestris major odore opii, Strong-scented wild lettuce.*

Fl. yellow. August. Biennial. Waysides, on chalky or clayey soil.

The inspissated juice has been given in dropsies arising from visceral obstruction; gently laxative, very diuretic, and somewhat diaphoretic, narcotic, and anodyne: occasions giddiness. (G.) The milky juice, when inspissated, has been substituted for opium. (L.) It requires to be administered in a sixfold dose. (O'Sh.

LAPPA. (De Cand. vi. 661.)

*LAPPA MAJOR. (E. B. 1228.) *Arctium lappa, Bardana major, Lappa glabra, Great burdock.*

Fl. purple. July. Biennial. Waysides, and in woods.

Young shoots, stripped, eaten as asparagus; root used in disorders of the skin; diaphoretic, diuretic; also useful in dropsy; seeds diuretic, diaphoretic, and slightly purgative. (G.)

*LAPPA MINOR. (E. B. 1228.) *Burdock.*

Fl. purple. July, August. Biennial. Waste places.

Root is reckoned tonic, aperient, sudorific, and diuretic; it has been used in the form of decoction in rheumatism and in diseases of the skin; Sir Robert Walpole praised it as a gout medicine, and others have considered it an excellent substitute for sarsaparilla; the fruit, which is bitter, and slightly acrid, has been used as a diuretic. (L.) The root deserves extensive trial; the seeds also are very likely to prove of value on further examination of their properties. (O'Sh.)

LAMPSANA. (De Cand. vii. 76.)

*LAMPSANA COMMUNIS. (E. B. 844.) *Lapsana communis. Common nipple wort.*

Fl. yellow. July, August. Annual. Sides of ditches, and cultivated ground.

Used for healing sore nipples.

LEUCANTHEMUM. (De Cand. vi. 45.)

*LEUCANTHEMUM VULGARE. (E. B. 601.) *Bellis major, Chrysanthemum leucanthemum, Great daisy, Great white ox-eye, Ox-eye daisy.*

Fl. of disk yellow, ray white. June, July. Perennial. Dry pastures.

Properties same as those of Chrysanthemum segetum.

LEONTOPODIUM. (De Cand. 275.)

LEONTOPODIUM ALPINUM. *Filago leontopodium, Gnaphalium leontopodium.* Mountainous parts of Europe.

Roots astringent and discussive.

LIATRIS. (De Cand. v. 128.)

LIATRIS SQUARROSA. *Serratula squarrosa.* North America. Known in the southern part of the United States by the name of *Rattlesnake's master;* in case of being bitten by this reptile, they bruise the roots and apply them to the wound, while at the same time the patient drinks a decoction of it in milk. (Pursh.) The roots have a terebinthinous odour, and are reputed to be powerfully diuretic, and hence antisiphilitic; it is probable that other species of this genus, particularly L scariosa and L. odoratissima, possess similar properties, at least that of being diuretic. (L.)

LINOSYRIS. (De Cand. v. 351.)

LINOSYRIS VULGARIS. *Chrysocoma linosyris, German golden locks.* Middle and South of Europe.

Anthelmintic, deobstruent.

MADIA. (De Cand. v. 691.)

MADIA SATIVA. *Madia.* California.

Seeds yield oil.

MARUTA. (De Cand. vi. 13.)

*MARUTA COTULA. (E. B. 1772.) *Anthemis cotula, A. fœtida, M. fœtida, Chamæmelum fœtida, Cotula, May weed, Stinking chamomile.*

Fl. dark yellow, ray white. July, August. Annual. Waste places.

Used in hysteric fits; and the juice in the king's evil. (G.) Every part of the plant is fœtid and acrid, blistering the skin when much handled. Its decoction is a strong and active bitter, in the dose of a teacupful producing copious vomiting and sweating. (L. ex Barton.)

MATRICARIA. (De Cand. vi. 51.)

*MATRICARIA CHAMOMILLA. (E. B. 1232.) *Chamæmelum vulgare, Common chamomile.*

Flower disk yellow, ray white. August. Annual. Corn-fields and waste ground.

Emmenagogue, stomachic, carminative, anticolic, and used externally as a fomentation in nephritic pains.

MIKANIA. (De Cand. v. 187.)

MIKANIA GUACO. *Guaco, Huaco.* South America.

Sudorific, alexiterial, used in bites of serpents and hydrophobia. G.) Reputed in South America to be a powerful remedy for the wounds of venomous serpents; the imported extract having been tried in this country against hydrophobia, has produced no effect, and the remedy has fallen into disrepute; Dr. Hancock, however, asserts that the real alexipharmic guaco is an aristolochia. (L.)

MIKANIA OFFICINALIS. *Coroçoa de Jesu.* Brazil.

Leaves have an agreeable mixture of bitter, mucilaginous, and aromatic ingredients, and are therefore used with great success like Peruvian bark and cascarilla. It is said to be particularly efficacious as well in remitting fevers as in weakness of digestion; it is taken both in decoction and extract. (L. ex Martius.)

MIKANIA OPIFERA. *Eroa da cobra.* Brazil.

The expressed juice is used externally and internally, and the bruised bark, moistened with oil, is applied as a poultice in case of wounds caused by the bite of venomous serpents; it is said to effect a cure by its powerful diuretic action. (L. ex Martius.)

MULGEDIUM. (De Cand. vii. 247.)

MULGEDIUM PLUMIERI. *Sonchus plumieri.* South of Europe.

Calyx exudes resinous drops.

NABALUS. (De Cand. vii. 240.)

NABALUS SERPENTARIUS. *Prenanthes serpentaria, Vejuco.* North America.

Persons inoculated with its juice are said so be insensible to the poison of serpents. (L.)

NOTOBASIS. (De Cand. vi. 660.)

NOTOBASIS SYRIACA. *Acarnus, Carduus Syriacus, Theophrastus' thistle.* South of Europe.

Eaten as a potherb while young.

ONOPORDON. (De Cand. vi. 618.)

*ONOPORDON ACANTHIUM. (E. B. 977.) *Acanthium, Common cotton thistle.*

Fl. purple. August. Biennial. Waste grounds and roadsides in a gravelly soil,

Flowers used to coagulate milk; receptacle eaten as artichokes. (G.)

OPORINA. (De Cand. vii. 108.)

*OPORINA AUTUMNALIS. (E. B. 830.) *Leontodon autumnale, Hieracium minus, Small hawkweed, Autumnal hawkbit.*

Fl. yellow. August. Perennial. Meadows and pastures. Common.

Leaves sharpen the sight; laxative.

PACOURINA. (De Cand. v. 14.)

PACOURINA EDULIS. Cayenne.

Receptacle and whole plant edible.

PALLENIS. (De Cand. v. 487.)

PALLENIS SPINOSA. *Bupthalmum spinosum, Aster Atticus, Inguinalis, Yellow star wort.*

Vulnerary, used in buboes and other swellings of the groin.

PETASITES. (De Cand. v. 206.)

*PETASITES VULGARIS. (E. B. 430, 431.) *Petasites, Tussilago petasites, Butter bur.*

Fl. pale flesh colour. April, May. Perennial. Wet meadows and river sides.

Leaves used to dress ulcers; flowers strongly diaphoretic, useful in asthma; root used against the tape-worm. (G.)

PIQUERIA. (De Cand. v. 104.)

PIQUERIA TRINERVIA. *Ageratum febrifugum, Stevia febrifuga, Xoxonitztal, Yoloxiltic.* Mexico.

Used in Mexico as a remedy against intermittent fevers. (L.)

PLACUS. (De Cand. vii. 261.)

PLACUS LÆVIS. Cochin China.

PLACUS TOMENTOSUS.

Juices used to give a smell to cakes.

PTARMICA. (De Cand. vi. 19.)

*PTARMICA VULGARIS. (E. B. 757.) *Achillea ptarmica, Ptarmica, Bastard pellitory, Sneezewort.*

Fl. white. July, August. Perennial. Moist meadows.

Leaves sternutatory; root acrid. (G.) The whole plant is pungent, promoting a flow of saliva; its dried leaves produce sneezing, but this is thought to be owing to their little sharp marginal teeth. (L. ex Smith.)

PULICARIA. (De Cand. v. 477.)

*PULICARIA DYSENTERICA. (E. B. 1115.) *Conyza media, Inula dysenterica, Middle-size fleabane, Common fleabane.*

Fl. yellow. September. Annual. Moist places. Common.

Tonic, used in diarrhœa. (G.) Linnæus states, on the authority of General Keith, that this plant cured the Russian army of the dysentery; but Haller speaks contemptuously of the medical virtues of this plant, as he says it abounds in earthy matter. (L. ex Smith.)

PULICARIA ODORA. *Inula odora, Sweet-rooted star-wort.*

Root aromatic.

*PULICARIA DENTATA. (E. B. 1196.) *Conyza, Inula pulicaria, Pulicaria, Small fleabane.*

Fl. yellow. September. Annual. Sandy hollows inundated in winter.

Drives away insects by its smell.

PYRETHRUM. (De Cand. vi. 53.)

*PYRETHRUM PARTHENIUM. (E. B. 1231.) *Matricaria parthenium, Common fever few.*

Flower of disk yellow, of the ray white. July. Perennial. Waste places.

The whole plant is bitter and strong scented, reckoned tonic, stimulating, and anti-hysteric. (Smith.) It was once a popular remedy in ague; its odour is said to be particularly disagreeable to bees, and that these insects may be easily kept at a distance by carrying a handful of the flower heads. (L. ex Burnett.)

PYRETHRUM TANACETUM. *Tanacetum balsamita, Cost mary.* South of Europe.

Leaves stomachic, cordial, cephalic, uterine; supposed to diminish the narcotic power of opium; seed vermifuge.

SANTOLINA. (De Cand. vi. 35.)

SANTOLINA CHAMÆCYPARISSUS. *Abrotanum fœmina, Chamæcyparissus, Lavender cotton.* South of Europe.

Vermifuge, used to drive away insects from wardrobes.

SANTOLINA FRAGRANTISSIMA. Egypt, Palestine.

The flower heads are extremely fragrant when dry, and are sold in the shops of Cairo as a substitute for chamomile, under the name of *Babouny*, or *Zeysoum*. Forskahl says the fresh juice of the plant is applied in affections of the eyes. (L.)

SCOLYMUS. (De Cand. vii. 75.)

SCOLYMUS HISPANICUS. *Spanish cardoons.* South of Europe.

Root and young shoots esculent.

SCOLYMUS MACULATUS. *Golden thistle.* South of Europe.

Root used instead of eryngo.

SCORZONERA. (De Cand. vii. 117.)

SCORZONERA HISPANICA. *Scorzonera, Viper's grass.* Spain.

Eaten.

SCORZONERA PURPUREA. *S. subcærulea, Hungarian viper's grass.* Germany, Bohemia, &c.

Eaten.

SENECIO. (De Cand. vi. 340.)

SENECIO CACALIASTER. *Cacalia alpina, C. saracenica.* South of France.

Used in coughs, the juice allays the tickling in the throat.

SENECIO DORIA. *Herba doria, Doria's wound wort.* South of Europe.

Leaves used internally, and externally in wounds and malignant ulcers.

SENECIO DORONICUM. *Alpine groundsel.* South of Europe.

Infusion and steam of the infusion used in asthma.

*SENECIO JACOBÆA. (E. B. 1130.) *Jacobœa, Segyrum, Ragwort.*

Fl. yellow. July, August. Perennial. Waysides and pastures.

Used in poultices and cholic pains; also as a gargle in sore throat.

*SENECIO SARACENICUS. (E. B. 2211.) *Broad-leaved ragwort, Consolida Saracenica, Saracen's wound wort.*

Fl. yellow. July, August. Perennial. Moist pastures in Westmoreland and Cumberland.

Leaves used as those of S. Doria.

SENECIO TOMENTOSUS. *Cineraria heterophylla.* North America.

Bark yellow, powerfully anthelmintic.

*SENECIO VULGARIS. (E. B. 747.) *Erigeron, Common groundsel.*

Fl. yellow. Whole year. Annual. Waste grounds. Common.

Weak infusion a common purge; strong infusion or juice used as an emetic, and also given to horses to free them from botts; leaves externally suppurative; flowers given to song-birds as a cooler. (G.) A popular, but useless, vermifuge. (O'Sh.)

SERRATULA. (De Cand. vi. 667.)

*SERRATULA TINCTORIA. (E. B. 38.) *Serratula, Sawwort.*

Fl. purple. July, August. Perennial. Thickets. Common.

Vulnerary; dyes yellow with alum, but is inferior to woad.

SILYBUM. (De Cand. vi. 616.)

*SILYBUM MARIANUM. (E. B. 976.) *Carduus mariæ, C. marianus, Milk thistle, Our lady's thistle.*

Fl. purple. July. Perennial. Waste places. Wimbledon Common.

Pectoral, antipleuritic, aperitive. (G.) Full-grown leaves said to be sudorific and aperient. (L.)

SOLIDAGO. (De Cand. v. 330.)

SOLIDAGO CANADENSIS. *Canada golden rod.* North America.

With alum dyes wool, silk, and cotton a beautiful yellow.

SOLIDAGO ODORA. *S. retrorsa, American golden rod.* North America.

Leaves, *solidago, P. U. S.*, carminative, nervine, used as tea, and even exported in large quantities from America to China. (G.) Leaves delightfully fragrant, partaking of anise and sassafras, yielding a volatile oil, which is aromatic, gently stimulant, diaphoretic, and carminative; also employed as an excellent substitute for tea. (L.)

SOLIDAGO VIRGA AUREA. (E. B. 301.) *Virga aurea, Golden rod.*

Fl. yellow. July, September. Perennial. Heaths and woods. Common.

Herb vulnerary, diuretic, useful in spitting of blood; infusion used in fevers.

SONCHUS. (De Cand. vii. 184.)

*SONCHUS ARVENSIS. (E. B. 674.) *Hieracium, H. magus, Corn sow thistle, Great hawk weed.*

Fl. yellow. August. Perennial. Corn fields. Common.

*SONCHUS CILIATUS. *S. oleraceus, Common sow thistle.*

Var. α. (E. B. 343.) *Sonchus lævis, S. oleraceus lævis, Hare's lettuce, Smooth sow thistle.*

Var. β. (E. B. 2765.) *S. asper, S. oleraceus asper, Prickly sow thistle.* This variety is also referred to S. Fallax.

Fl. yellow. August. Annual. Waste places and cultivated ground.

These, and other species of this genus, as well as those of Picris, Crepis, Prenanthes, Hyoseris, &c., possess similar qualities with lettuce.

SPILANTHES. .(De Cand. v. 620.)

SPILANTHES ACMELLA. *Verbesina acmella.* East Indies.

Diuretic, diaphoretic, attenuant, and anodyne; leaves and seeds used as tea.

SPILANTHES OLERACEA. *Bidens fervida.* South America.

When masticated irritates the interior of the mouth, and provokes a copious flow of saliva. (G.) The whole plant, but especially the involucre and receptacle, act as a powerful stimulant to the salivary organs. (L.)

STENACTIS. (De Cand. v. 298.)

STENACTIS ANNUA. *Erigeron annuum.* North America.

Employed in the United States as a diuretic. (L.)

TAGETES. (De Cand. v. 642.)

**TAGETES PATULA. *French marygold.*

Fl. dark yellow or orange brown. July, September. Annual. Native of Mexico.

Dried juice used in disorders of the eyes; flowers dye yellow.

TANACETUM. (De Cand. vi. 127.)

TANACETUM ANNUUM. *Heliochrysum, Golden cud weed.* Spain, south of France.

Herb emmenagogue, used in dyeing and rheumatism.

*TANACETUM VULGARE. (E. B. 1229.) *Tansy.*

Fl. yellow. August. Perennial. Borders of fields and roads.

Every part is bitter, with a strong but not unpleasant scent. The qualities are esteemed of a tonic and cordial nature, expelling intestinal worms, and strengthening the digestive powers; the plant, however, does not agree with every stomach. (Smith.) Withering says, if meat is rubbed with tansy leaves, the flesh fly will not touch it. (L.)

TARAXACUM. (De Cand. vii. 145.)

*TARAXACUM DENS LEONIS. (E. B. 510.) *Dens Leonis, Leontodon taraxacum, Dandelion, Piss-a-bed.*

Fl. yellow. May, November. Perennial. Meadows and pastures.

Root, *Taraxaci radix*, diuretic, roasted and used as coffee; blanched leaves used in salads. The infusion, decoction, and extract of the root are tonic, and in large doses aperient; in some cases it acts as a diuretic; in the hepatic complaints of persons long resident in hot climates, it often affords very marked relief. (L.) Dose of the extract from three to ten grains thrice daily. (O'Sh.) It has been employed in decoction or extract in affections of the spleen, chronic cutaneous diseases, uterine obstructions, &c. (Pereira.)

TRAGOPOGON. (De Cand. vii. 112.)

*TRAGOPOGON PRATENSIS. (E. B. 434.) *Go-to-bed at noon, Yellow goat's beard.*

Fl. yellow. June. Perennial. Meadows and pastures.

*TRAGOPOGON PORRIFOLIUS. (E. B. 638.) *T. purpureum, Purple goat's beard, Salsify.*

Fl. purple. May, June. Perennial. Moist meadows.

Roots eaten as potherbs, opening, and supposed to be useful in affections of the chest; young roots also esculent. (G.)

TRIPOLIUM. (De Cand. v. 253.)

*TRIPOLIUM VULGARE. (E. B. 87.) *Aster tripolium, Sea starwort.*

Flower, disk yellow, ray purple. July, September. Salt marshes.

Root hydragogue.

TUSSILAGO. (De Cand. v. 208.)

*TUSSILAGO FARFARA. (E. B. 429.) *Farfara, Tussilago, Coltsfoot.*

Fl. yellow. March, April. Perennial. Moist clay soils.

Leaves form the basis of most of the British herb tobaccos; used also externally to diminish inflammation; an infusion of the dried leaves is much used as an expectorant in coughs, and shortness of breath, as tea, or the steam is inhaled for the same purpose; a strong decoction of them is of considerable service in scrofulous cases; the downy substance on the underside of the leaf, dipped in a solution of saltpetre, and dried, is used as tinder; juice drunk liberally is serviceable in calculous complaints. (G.) The leaves, either smoked like tobacco, or taken in infusion, have been much employed against dyspnœa; it is a demulcent bitter, and acts by soothing irritation of the air passages; Dr. Pereira calls it a very slight tonic. (L.)

VERNONIA. (De Cand. v. 15.)

VERNONIA ANTHELMINTICA. *Conyza anthelmintica, Serratula anthelmintica.* East Indies.

The fruit is accounted in India a very powerful anthelmintic. (L.) All the parts of the plant bitter. (O'Sh.)

XANTHIUM. (De Cand. v. 522.)

*XANTHIUM STRUMARIUM. (E. B. 2544.) *Bardana minor, X. lappa minor, Broad leaved burdock, Small burdock.*

Fl. green. August, September. Annual. Waste ground. Rare.

Root bitter, antiscrofulous, and anticancerous.

ZACINTHA. (De Cand. vii. 178.)

ZACINTHA VERRUCOSA. *Chicorium verrucarium, Lapsana zacintha, Wart succory.* South of Europe.

Herb diuretic, edulcorant, takes off warts.

ORDER 94.—LOBELIACEÆ. (De Cand. vii. 339.)

Calyx superior, five-lobed or entire; *corolla* monopetalous, irregular, inserted in the calyx, five-lobed; *stamens* five, inserted alternately with the lobes of the corolla; *anthers* cohering; *ovary* inferior, 1—3 celled, ovules very numerous; *style* simple; *stigma* fringed; *fruit* a capsule, one or more celled, many seeded, dehiscing at the apex; *seeds* attached either to the axis, or the lining of the pericarp; *embryo* straight, in the axis of the fleshy albumen. *Herbs* or *under shrubs,* with alternate, exstipulate *leaves,* and axillary or terminal *flowers.*

LOBELIA. (De Cand. vii. 357.)

**LOBELIA CARDINALIS. *Common cardinal flower.*

Fl. scarlet. July, August. Perennial. Native of Mexico. Root vermifuge.

LOBELIA INFLATA. *Bladder podded lobelia, Indian tobacco.* North America.

Root, *Lobelia P. U. S.*, used in leucorrhœa. (G.) An acrid narcotic, and most powerful emetic, used in asthma with great advantage; in small doses it is expectorant and diaphoretic, exciting expectoration without the pain of coughing; in such doses as a common tea-spoonful of the seeds and leaves, in which quantity irregular practitioners have ventured to give it, it frequently proves fatal in five or six hours; it has been used instead of tobacco in the form of enema, in strangulated hernia. (L.)

LOBELIA SYPHILITICA. *Blue cardinal flower.* North America.

Root depurative, antivenereal. (G.) Root acrid and emetic, and has been used as a remedy for syphilis; it has the reputation of acting as a speedy cure for this disease, but European practice does not confirm its American reputation. Are not its curative properties volatile? (L.)

*Lobelia urens. (E. B. 953.) *Acrid lobelia.*

Fl. purple. August, September. Perennial. Devonshire. Very rare.

Very active, reputed a poison.

Solenanthis. (De Cand. vii. 412.)

Solenanthis longiflora. *Hippobroma longifolia, Lobelia longiflora, Isotoma longiflora.* West Indies.

Juice corrosive. (G.) One of the most venomous of all known plants. Taken internally, it brings on fatal hypercatharsis; if any of the juice touches the lips or eyes, it produces violent burning inflammation. Horses are said to burst after feeding upon it, whence the Spanish West Indians call it *Rebenta cavillos.* (L.)

Tupa. (De Cand. vii. 391.)

Tupa feuillei. *Lobelia tupa, Rapuntium tupa.* South America.

Plant and root poisonous in the extreme; acts as an emetic simply by smelling the flowers; juice caustic. (G.) Has similar properties to the last plant, its very flowers are said to produce vomiting by their smell.

Tupa cirsiifolia. *Lobelia cirsiifolia.*

Very active, reputed a poison.

Order 95.—CAMPANULACEÆ. (De Cand. vii. 414.)

Calyx adnate to the ovary, generally five-lobed, persistent; *corolla* gamopetalous, inserted into the upper part of the tube of the calyx, five-lobed, generally regular and marescent, valvate in æstivation; *stamens* generally five, inserted into the calyx, beneath the corolla, distinct from it and alternate with its lobes; *anthers* generally distinct, sometimes slightly connate, oblong, two-celled, with spherical pollen; *ovary* glandular above; *style* 1, more or less hairy; *stigma* naked, 3—5 cleft; *capsules* three, rarely five-celled, dehiscing by 3—5 lateral apertures, or by incomplete valves at the apex; cells many-seeded; *seeds* attached to a central placenta of the cells; *embryo* straight, in the axis of a fleshy albumen; *radicle* inferior. *Herbs* with a milky juice and alternate *leaves*; *flowers* either distinct, or in involucrated heads.

Campanula. (De Cand. vii. 457.)

Campanula laciniata. *Medium, Syrian bell flower.* Greece, Syria.

Roots restrain the menses; seeds stimulate their expulsion.

**Campanula medium. *Viola mariana, Canterbury bells, Coventry bells.*

Fl. purple, blue, or white. July, September. Biennial. Native of the South of Europe.

Root used as a potherb; cooling.

*Campanula patula. (E. B. 42.) *Field bell flower, Spreading bell flower.*

Fl. dark blue. July, August. Biennial. Pastures and hedges in South-east of England. Rare.

Leaves lactescent, bitter.

*Campanula rapunculus. (E. B. 283.) *Rapunculus esculentus, Rampions, Rampion bell flower.*

Fl. blue. July, August. Perennial. In the southern and eastern counties, in gravelly soil.

Root esculent, far more delicate than turnips or radishes; juice odontalgic; seeds ophthalmic.

*Campanula trachelium. (E. B. 12.) *Trachelium, Canterbury bells, Great throat wort, Nettle-leaved bell-flower.*

Fl. violet blue. July, August. Perennial. Woods.

Root eaten in salads; herb astringent; recommended in quinsey, tumours, and inflammation of the mouth.

Jasione. (De Cand. vii. 415.)

*Jasione montana. (E. B. 882.) *Annual sheep's scabious, Hairy sheep's scabious.*

Fl. blue. June, August. Annual. Dry heathy pastures.

Herb astringent; used in inflammations of the mouth and neighbouring parts.

Phyteuma. (De Cand. vii. 450.)

*Phyteuma orbiculare. (E. B. 142.) *Rapunculus corniculatus, Horned rampions, Round-headed rampion.*

Fl. blue. August, September. Perennial. Chalky hills.

Herb used in syphilis.

*Phyteuma spicatum. (E. B. 2598.) *Spiked rampion.*

Fl. greenish white. June, July. Perennial. Sussex.

Root astringent, used in quinsey.

Order 96.—VACCINIEÆ. (De Cand. vii. 552.)

Calyx adherent, persistent, or deciduous; *corolla* epigynous, gamopetalous, 4—5—6 divided, the divisions alternating with the segments of the calyx; *stamens* double the number of the lobes of the corolla, epigynous, filaments free or monadelphous; *anthers* terminal, often two-horned, opening by pores; *ovary* single; *style* one; *stigma* one, simple; *berry* persistent, crowned by the calyx, 4—5 celled, the cells one, or many-seeded; *embryo* straight, in the axis of a fleshy albumen; *cotyledons* very short; *radicle* long, inferior. *Under-shrubs* with coriaceous alternate *leaves.*

Oxycoccus. (De Cand. vii. 576.)

Oxycoccus macrocarpus. *Vaccinium macrocarpum, American cranberry.* North America.

Berries esculent, used in tarts; imported in large quantities from North America preserved in water.

*Oxycoccus palustris. (E. B. 319.) *Vaccinium oxycoccus, Cranberry.*

Fl. bright rose colour. June. Under shrub. In peat bogs.

Properties the same as those of O. Macrocarpus.

Phalerocarpus. (De Cand. vii. 577.)

Phalerocarpus serpyllifolia. *Oxycoccus hispidulus, White cranberry.* North America.

Berries esculent, used in tarts.

Vaccinium. (De Cand. vii. 565.)

*Vaccinium myrtillus. (E. B. 456.) *Myrtillus, Vaccinia, Common bilberry.*

Fl. green, with a red tinge. May. Small shrub. In mountainous districts.

Berries, *black whortle berries, bilberries*, acidulous, refreshing, useful in fevers; also antiscorbutic; would make wine; dried berries, *berry dye*, imported from Germany to colour wines.

*Vaccinium uliginosum. (E. B. 381.) *Great bilberry.*

Fl. flesh-coloured. May. Small shrub. Mountain bogs.

*Vaccinium vitis idæa. (E. B. 598.) *Red whortle berry*, or *Cowberry.*

Fl. pale flesh colour. May, June. Small shrub. Dry heaths.

Leaves sold for those of Uva ursi, but are veined in a net-work above, dotted underneath, and their infusion precipitates neither isinglass jelly, nor a solution of green vitriol.

Order 97.—ERICACEÆ. (De Cand. vii. 580.)

Calyx 4—5 cleft, generally equal, persistent, entirely free from the ovary; *corolla* monopetalous, regular, 4—5 cleft, sometimes of 4—5 petals, imbricate in æstivation; *stamens* in general twice as many as the divisions of the corolla; *anthers* bilocular, terminated by two horn-like appendages at the summit or base, and dehiscing in general by a pore near the summit; *ovary* surrounded at the base by a hypogynous disk, or by scales, many-celled, many-seeded; *style* simple, straight; *stigma* with as many lobes as there are cells in the ovary; *fruit* capsular, opening by as many valves as there are cells; *seeds* minute; *embryo* cylindrical, in the midst of a fleshy albumen; *radicle* opposite the hilum. *Shrubs* or *under-shrubs*, with evergreen, simple, rigid, whorled, or alternate *leaves.*

Roots and leaves mostly astringent, sometimes narcotic; berries often esculent. The brown powder that adheres to the petioles of almost every species of Kalmia, Andromeda, and Rhododendron, is used in America as snuff.

ANDROMEDA. (De Cand. vii. 606.)

*ANDROMEDA POLIFOLIA. (E. B. 713.) *Marsh andromeda, Rosemary leaved andromeda, Wild rosemary.*

Fl. rose coloured. June. Small shrub. Peat bogs.

Used in fomentations and baths against rheumatism and paralytic affections, causing perspiration; dyes a fine yellow and tans leather.

ARBUTUS. (De Cand. vii. 581.)

ARBUTUS ANDRACHNE. *Andrachne, Strawberry bay.* Greece, Cyprus.

Fruit acerb and austere, but esculent.

ARBUTUS INTEGRIFOLIA. Island of Crete.

Berry esculent.

*ARBUTUS UNEDO. (E. B. 2377.) *Common arbutus, Strawberry-tree.*

Fl. greenish white. September, October. Small tree. Ireland.

Fruit astringent, yields sugar. (G.) A wine is made from the fruit in Corsica, but it is reported to be narcotic if taken in quantity. (L.)

ARCTOSTAPHYLOS. (De Cand. vii. 584.)

*ARCTOSTAPHYLOS ALPINA. (E. B. 2030.) *Black bear berry.*

Fl. white, with a tinge of pink. May. Trailing shrub. Highland mountains.

Berry esculent.

*ARCTOSTAPHYLOS UVA URSI. (E. B. 714.) *Arbutus uva ursi, Uva ursi, Red bear berry.*

Fl. rose coloured. May. Trailing shrub. North of England.

Leaves, *Uvæ ursi folia*, bitter, astringent; used in disorders of the urinary passages, and thought to be lithontriptic. (G.) Used in nephritic and calculous cases: of very doubtful action in the latter, but believed to be a decided palliative in nephritic complaints; also employed in dysuria, catarrhus vesicæ, leucorrhœa, and gonorrhœa; exhibited in the form of decoction, and powder of the leaves; its action is slow, and it therefore requires to be given for a considerable period; although the effects are uncertain, they sometimes give astonishing relief. (L. ex Pereira.)

AZALIA. (De Cand. vii. 715.)

AZALIA PONTICA. Georgia, Asia Minor.

Dioscorides asserted that the honey collected about Heraclea in Pontus produced alienation of mind, with profuse perspiration; and it has been believed that the pestilence which attacked the soldiers of Xenophon in the famous retreat of the 10,000, was caused by the quantity of this honey then eaten.

Tournefort ascribed the poison to the flowers of Rhododendron ponticum and Azalia pontica; but Pallas is of opinion that the latter alone is the cause; he says that the effects of the Euxine honey are like those of Lolium temulentum, and occur in a country where no Rhododendron grows; the natives are well aware of the deleterious qualities of the plant, and it is related that goats which browse on the leaves before the pastures are green, suffer in consequence; and moreover that cattle and sheep perish. (L.)

ERICA. (De Cand. vii. 613.)

Various species of heaths, as E. vulgaris, E. herbacea, E. purpurascens, are used in fomentations and baths against rheumatism and paralytic affections, causing a perspiration: dye a fine yellow, and tan leather.

GAULTHERIA. (De Cand. vii. 592.)

GAULTHERIA PROCUMBENS. *Box berry, Chequer berry, Partridge berry, Mountain tea.* North America.

Leaves, *gaultheria P. U. S.*, used for tea. (G.) Fruit contains an aromatic, sweet, highly pungent, volatile oil, which is antispasmodic and diuretic; a tincture has been useful in diarrhœa; Coxe states, that the infusion is useful in asthma; it is used in North America as tea; and brandy, in which the fruit has been steeped, is taken in small quantities, in the same way as common bitters. (L.) Has been employed as an emmenagogue, and with the view of increasing the secretion of milk; but its chief use is to impart an agreeable flavour to mixtures and other preparations. It is used in the form of infusion, and also of an oil, which last is more used in regular practice than the leaves; instances of death are on record, resulting from the use of the oil by mistake, in the quantity of about a fluid ounce; on examination after death strong marks of inflammation of the stomach were discovered. (Wood and Bache's *American Dispensatory.*)

KALMIA. (De Cand. vii. 729.)

KALMIA LATIFOLIA. *Calico bush, Ivy, Lambkill, Laurel, Mountain laurel, Spoonwood.* United States.

Leaves poisonous to many animals; are reputed to be narcotic, but their action is feeble and unimportant; Bigelow states, that the flesh of pheasants which have fed upon the young roots is poisonous to man, and some cases of severe illness are on record, which have been ascribed to this cause alone. The flowers exude a sweet honey-like juice, which is said when swallowed to bring on intoxication of a phrenitic kind, which is not only formidable in its symptoms, but very lengthened in its duration. (Bigelow.) A brown powder, which adheres to the shoots, acts as a sternutatory. (L.) Bees and wasps feed upon the honey-like secretion, which renders the honey of the former powerfully intoxicating. (O'Sh.)

LEDUM. (De Cand. vii. 730.)

LEDUM LATIFOLIUM. *Wiserpukki, Wishecumpuoware, Labrador tea.* North America.

Leaves used for tea. (G.) The leaves, infused in beer, render it unusually heady, producing headache, nausea, and even delirium; they have nevertheless been used, it is said, with advantage in tertian agues, dysentery, and diarrhœa. (L. ex Pallas.) Odour aromatic and resinous; the infusion of the leaves stomachic, but induces giddiness if too strong. (O'Sh.)

LEDUM PALUSTRE. *Marsh cistus, Wild rosemary.* North of Europe.

Root astringent. (G.) Has the same properties as the last (L.)

LEUCOTHOE. (De Cand. vii. 601.)

LEUCOTHOE MARIANA. *Andromeda Mariana.* North America.

Decoction used as a narcotic.

LOISELEURIA. (De Cand. vii. 714.)

*LOISELEURIA PROCUMBENS. (E. B. 865.) *Azalea procumbens, Procumbent azalea.*

Fl. flesh coloured. May, June. Small shrub. Highland mountains.

Bark and leaves astringent. (G.) Has the reputation of being useful as an astringent medicine. (L.)

PERNETTYA. (De Cand. vii. 586.)

PERNETTYA MUCRONATA. *Arbutus mucronata.* South America.

Berries esculent.

RHODODENDRON. (De Cand. vii. 719.)

RHODODENDRON CHRYSANTHUM. *Yellow rhododendron.* North of Asia.

The leaves are decidedly narcotic in a remarkable degree; this was first noticed by Stetter, a Russian botanist, who had a tame deer, which became so intoxicated by browsing on about ten of the leaves, that after staggering about for some time, it dropped into a deep but troubled sleep for the space of four hours, after which it awoke free from all sign of suffering, but never would touch the leaves again; after this, Stetter's servants took to intoxicating themselves with the leaves, without any bad effects. Pallas and Koelpin assert, that a strong decoction of the leaves is of the greatest service in chronic rheumatism, and even in venereal complaints, but that it is dangerous in acute rheumatism. Its value, as a means of removing arthritic complaints, has also been highly spoken of. Finally, Pallas mentions an inveterate case of nervous sciatica, which had brought the patient to a state of lameness and deplorable emaciation, which was completely cured by perseverance in the use of the leaves for two years: no subsequent inconvenience was experienced, nor any signs of habitual drunkenness, although the dose was as much as four fluid ounces of the concentrated infusion daily. (L.)

RHODODENDRON MAXIMUM. *American rosebay.* North America.

An astringent, but not narcotic, according to Bigelow; Barton, however, asserts that it is certainly a poison. (L.)

RHODODENDRON FERRUGINEUM. *Dwarf rosebay.* South of Europe.

RHODODENDRON PONTICUM. West of Persia, Georgia.

Reported to be deleterious, and to be among the plants whose nectar renders the honey of Trebisond poisonous; but this statement of Tournefort is contradicted by Guldenstædt. Vide *Azalea Pontica.* (L.) The leaves of all these rhododendrons are austere, astringent, bitter, stimulant, diaphoretic, and narcotic; used against rheumatism and the gout; ʒij. of the dried leaves infused in half a pint of water, kept hot all night, and drank in the morning; roots astringent. (G.)

ORDER 98. PYROLACEÆ. (De Cand. vii. 772.)

Calyx of 4—5 inferior persistent sepals; *corolla* of five petals, sometimes free, or more or less united, imbricated in æstivation; *stamens* twice as numerous as the petals, not adnate to the petals; *anthers* bilocular, dehiscing by two pores; *ovary* 3—5 celled, placed upon a hypogynous disc; *style* one; *stigma* subrotund or lobate, sometimes subindusiate; *fruit* capsular, 3—5 celled, with central placentæ; *seeds* minute, numerous, winged; *embryo* minute, at the base of the fleshy albumen. *Herbaceous plants* with simple, entire, or toothed *leaves.*

CHIMAPHILA. (De Cand. vii. 775.)

CHIMAPHILA UMBELLATA. *Pyrola umbellata, American wintergreen, Pipsissewa.* North America, Europe, Asia.

An infusion of the leaves has been found efficacious as a diuretic in dropsy. (G.) Astringent, tonic, sudorific, and diuretic. It is especially active in the last named property, combining a speedy diuretic with much tonic power. (O'Sh.) The infusion of the dried leaves, taken internally, acts as an agreeable tonic; it promotes the action of the secreting organs more especially the kidneys, over which, indeed, it has appeared to exercise a specific influence, increasing the quantity of urine, diminishing, as some have imagined, the quantity of lithic acid, or lithates secreted, and beneficially influencing several forms of chronic nephritic disease; its qualities are in every respect analogous to those of Uva ursi; it has been employed in dropsy, chronic affections of the urinary organs, and in scrofula, in which last its reputation in America is so high, that it has obtained the title of king's cure; it is given in the form of a decoction or extract; the latter has been employed in doses of ten or fifteen grains. (Pereira.)

PYROLA. (De Cand. vii. 772.)

*PYROLA ROTUNDIFOLIA. (E. B. 213) *Pyrola, Round-leaved winter green.*

Fl. white. July, September. Perennial. Woods in Norfolk, Suffolk, &c. Rare.

Vulnerary.

*PYROLA SECUNDA. (E. B. 307.) *Pyrola altera, Serrated winter green, Small winter green.*

Fl. greenish white. July. Perennial. Yorkshire. Rare. Scotland.

Herb cooling, drying; leaves diuretic, used in dropsy.

SUB-CLASS III. COROLLIFLORÆ.

ORDER 99. SAPOTACEÆ. (De Cand. viii. 154.)

Calyx 5, or rarely 4—8 parted, or 4—8 lobed, lobes persistent, either in one or two rows; *corolla* gamopetalous, deciduous, its segments usually equal in number to those of the calyx, and alternating with them, seldom twice or thrice as many; *stamens* arising from the corolla, definite, distinct, the fertile ones equal in number to the segments of the calyx, and opposite those segments of the corolla which alternate with the latter, seldom more; *anthers* usually turned outwards, bilocular; the sterile stamens as numerous as the fertile ones, with which they alternate, sometimes wanting; *ovary* with several cells, which are often opposite to the lobes of the calyx, in each of which is one erect ovule; *style* one; *stigma* acute, or capitellate, with as many tubercles or lobes as there are cells; *fruit* drupaceous, or baccate, indehiscent, with several one-seeded cells, or by abortion with only one; *seeds* nut-like, sometimes cohering into a several-celled putamen; *testa* bony, shining, its inner face opaque and softer than the rest; *embryo* erect, large, white, usually enclosed in a fleshy albumen; *cotyledons*, when the albumen is present, foliaceous; when absent, fleshy, and sometimes connate; *radicle* short, straight, or a little curved, turned towards the hilum; *plumule* inconspicuous. *Trees* or *shrubs*, abounding in milky juice, with alternate, exstipulate, entire, coriaceous *leaves*, and an axillary inflorescence.

BASSIA. (De Cand. viii. 197.)

BASSIA BUTYRACEA. *Frelwa*, or *Phulwara, Butter-nut tree.* East Indies.

BASSIA LATIFOLIA. *Madhuca*, or *Mahwah.* East Indies.

Seeds yield a large quantity of oil, but they do not appear to be employed medicinally. (G. and L.) The petals contain sugar, and are much used for the manufacture of a very intoxicating spirit. (O'Sh.)

BASSIA LONGIFOLIA. *Illipe*, or *Illupie tree.* East Indies.

The fruit, when pressed, yields a large quantity of oil, used in India for lamps, soapmaking, and also for food; it is also employed medicinally to cure the itch, and other cutaneous disorders; the leaves, boiled in water, as well as the milk of the green fruit and bark, are used in rheumatic affections. (L.) The *Shea*, or *Butter tree* of Mungo Park, is a species of this genus; Burnett says that much of the palm oil of commerce is yielded by species of Bassia, or other sapotaceæ. (L.) The Fulwa butter is a soft solid at 95°. (O'Sh.)

Chrysophyllum. (De Cand. viii. 156.)

Chrysophyllum cainito. *Star apple.* Tropical America.
Juice of the unripe fruit, with orange juice, very astringent; its var. *β*, C. Jamaicense, has esculent fruit.

Chrysophyllum macoucou. French Guyana.

Chrysophyllum microcarpum. Hispaniola.

Chrysophyllum oliviforme. Jamaica and Hispaniola.
Fruits esculent.

Lucuma. (De Cand. viii. 165.)

Lucuma caimito. *Achras caimito.* Brazil.
Tree milky, fruit eatable.

Lucuma mammosa. *Achras lucuma, A. mammosa, Sapodilla tree.*
Seeds resemble chestnuts; kernel bitter, makes a strengthening emulsion. (G.) Said by Burnett to have an emetic milk. (L.)

Mimusops. (De Cand. viii. 201.)

Mimusops elengi. East Indies.

Mimusops manilkara. China, Philippine islands.
Pulp of the fruit eatable.

Sapota. (De Cand. viii. 173.)

Sapota Achras. *Achras sapota. Neeseberry. Sapodillu* West Indies.
Diuretic, bark used for the Peruvian bark. (G.) Bark, a powerful astringent, used with success as a substitute for cinchona. The seeds, stripped of their skins, are considered, by the people of Martinique, powerfully diuretic; six seeds pounded in a mortar with a spoonful of wine or water, form a draught which is given daily, at a single dose, in dysury, strangury, and similar disorders. If the dose is much increased, severe pains, and even danger, are brought on. (*Jacquin.*) Fruit eatable when it begins to blett, in that state considered by many as superior to pine apple. (L.)

To this order is supposed to belong the famous *Palo de vaca*, or *Cow tree* of South America, the trees of which are regularly milked by the inhabitants of the districts in which they grow. (Loudon.) Yields cow tree milk. (G.)

ORDER 100. EBENACEÆ. (De Cand. viii. 100.)

Flowers polygamous, or deciduous, seldom hermaphrodite; *calyx* gamosepalous, 3—7 lobed, lobes varying in æstivation, persistent; *stamens* definite, either arising from the corolla, or hypogynous, twice as many as the segments of the corolla, sometimes four times as many, or the same number, and then alternate with them; *filaments* simple, in the hermaphrodite species generally doubled, in the polygamous and deciduous ones both their divisions bearing anthers, but the inner one generally smaller; *anthers* attached by their base, lanceolate, two-celled, dehiscing lengthwise, sometimes bearded; *pollen* round, smooth; *ovary* free, 3—12 celled, each cell having one or two ovules pendulous from its apex; *styles* divided, seldom simple; *stigmas* bifid or simple; *fruit* fleshy, round, or oval, by abortion often five-seeded, its pericarp sometimes opening in a regular manner; *seed* with a membranous testa of the same figure as the albumen, which is cartilaginous and white; *embryo* in the axis, or but little out of it, straight, white, generally more than half as long as the albumen; *cotyledons* foliaceous, somewhat veiny, lying close together, occasionally slightly separate; *radicle* tapering, of middling length, or long, turned towards the hilum; *plumule* inconspicuous. *Trees* or *shrubs,* without milk and with a heavy wood; *leaves* alternate, exstipulate, entire, coriaceous; *inflorescence* axillary.

DIOSPYROS. (De Cand. viii. 222.)

DIOSPYROS CHLOROXYLON. East Indies.
Berries esculent.

DIOSPYROS EMBRYOPTERIS. *Embryopteris glutinifera, E. peregrina.* East Indies.

Fruit used as glue; yields *gaub;* seeds yield oil. (G.) Used in medicine as a valuable astringent and styptic, and is employed in Bengal for paving the bottoms of boats. The bark has been given with doubtful results, in the treatment of intermittent fevers. (O'Sh.)

DIOSPYROS KAKI. *Ki, Kaki.* China, Japan.
Fruit esculent.

DIOSPYROS MELANOXYLON. *Ebony tree.* East Indies.
The ebony tree is valuable, not only on account of its wood, but for the sake of its bark, which is astringent, and mixed with pepper, is given for the dysentery by the native doctors of India. (L.)

DIOSPYROS SAPOTA. *Var. β Nigra.* Philippine islands.
Berries esculent.

DIOSPYROS VIRGINIANA. *Persimmon, Pishamin.* United States.

Berries eatable when rotten ripe; bark, *Diospyros,* febrifuge, *P. U. S.* (G.) Bark said to be a powerful astringent and febrifuge. (L.)

ORDER 101. STYRACACEÆ. (De Cand. viii. 101.)

Calyx inferior, or superior, five, rarely four-lobed, persistent; *corolla* monopetalous, regular, with imbricated æstivation; *stamens* definite, or indefinite, arising from the tube of the corolla, of unequal length, cohering in various ways, but generally only slightly; *anthers* innate, two-celled, dehiscing inwardly; *ovary,* inferior, 3—5 celled;

ovules definite, the upper ascending, the lower pendulous, or *vice versa; style* simple; *stigma* somewhat capitate; *fruit* drupaceous, containing from one to four bony nuts; *seeds* ascending, or suspended, solitary, with the embryo lying in the midst of the albumen; *radicle* long, directed towards the hilum; *cotyledons* flat, foliaceous. *Trees* or *shrubs*, with alternate, exstipulate *leaves*, usually toothed, turning yellow in drying, and axillary flowers; *hairs* often stellate.

Styrax. (De Cand. viii. 259.)

Styrax benzoin. *Benzoin laurel.* East Indies.

Yields by incision benzoin. (G.) The resinous acrid substance called benzoin, is a secretion from the bark; it is a local irritant, its vapour causing violent coughing; it acts as a stimulant, more particularly, as is supposed, to the lungs; it has been used in some uterine complaints, as chlorosis.

Styrax officinalis. *Cane storax tree.* The Levant, Syria, Palestine.

Yields by incision storax. (G.) *Storax*, a fragrant resinous balsamic substance, is obtained in Asia Minor from the branches, by incision; it is brownish-red, friable, but soft and unctuous, and is considered a stimulating expectorant, being supposed to influence the mucous membranes of the air-passages; it is chiefly used in affections of the organs of respiration; the tree does not form the secretion in this country. (L.)

Symplocos. (De Cand. viii. 246.)

Symplocos alstonia. *Alstonia theæformis.* South America.

Leaves astringent, used as tea.

Symplocos tinctoria. *Hopea tinctoria.* North America.

Leaves used to dye yellow.

Order 102. OLEACEÆ. (De Cand. viii. 102.)

Flowers hermaphrodite, sometimes diœcious; *calyx* monophyllous, divided, persistent, inferior; *corolla* monopetalous, four-cleft, often tubular and irregular, occasionally of four petals, connected in pairs by the intervention of the filaments, sometimes apetalous; æstivation somewhat valvate; *stamens* two, alternate with the segments of the corolla, or with the petals; *anthers* two-celled, dehiscing longitudinally; *ovary* simple, two-celled, the cells two-seeded, the ovules pendulous and collateral; *style* one or none; *stigma* two-lobed, or entire; *fruit* a drupe or berry, or a one or two-celled capsule, often by abortion one-seeded; *seeds* with a dense fleshy albumen; *embryo* about half its length, straight; *cotyledons* foliaceous; *radicle* superior; *plumule* inconspicuous. *Trees* or *shrubs*, with opposite, simple, sometimes pinnated *leaves; flowers* in terminal, or axillary racemes, or panicles, the pedicels opposite, with single bracts.

Ligustrum. (De Cand. viii. 293.)

*Ligustrum vulgare. (E. B. 746.) *Ligustrum, Common privet.* Fl. white. June, July. Large shrub. Hedges and thickets.

Leaves bitter and slightly astringent; flowers astringent and temperant, used in washes and gargles for ulcers; berries have a dry spongy pulp, from which a rose-coloured paint may be obtained. (G.) Used for colouring wines. (O'Sh.)

OLEA. (De Cand. viii. 283.)

OLEA EUROPÆA. *Olea, O. sativa, Olive tree.* South of Europe.

Unripe fruit preserved in brine, oily, astringent; ripe fruit yields oil; leaves astringent; bark substituted for the Peruvian bark. (G.) From the pericarp is obtained, by pressure, the well-known substance called *olive oil*, the medical properties of which are demulcent, emollient, and laxative. The bark is bitter and astringent, and has a great reputation as a substitute for cinchona, according to De Candolle; it also yields a gum, or rather a gum-like substance, once in repute as a vulnerary; this has been found by Messrs. Poole and Pelletier to contain a peculiar substance, which those chemists have named *olivile.* (L.)

FRAXINUS. (De Cand. viii. 274.)

*FRAXINUS EXCELSIOR. (E. B. 1692.) *Common ash.*

Fl. greenish, with black scales. April, May. Large tree. Woods and hedges.

Bark febrifuge and diuretic; seeds acrid, bitter; leaves ʒij. to ℥jss., in infusion a good purge, and a decoction of the same has been used to cure agues; exudes a small quantity of manna from the leaves in hot weather. (G.) Not only yields manna in the warm climate of the south of Europe, but is reported to have a tonic febrifugal bark, and leaves almost as cathartic as those of senna, producing an unequivocal action upon the kidneys. (L.)

FRAXINUS ORNUS. *Ornus europæa, Flowering ash.* South Europe.

From the branches there exudes a bitter sweet substance, called manna in the shops, well known as a gentle laxative. (L.)

FRAXINUS PARVIFOLIA. Asia Minor.

FRAXINUS ROTUNDIFOLIA. *Ornus rotundifolia.* Calabria and the Levant.

Exude manna. The manna yielded by the latter of these is, according to Tenore, of better quality than that obtained from F. ornus. In Calabria and Sicily, in the hottest parts of the summer months, the manna oozes out of the leaves, and from the bark of the trunk and larger branches of the Fraxinus, or Calabrian ash. The Ornus likewise affords it, but from the trunk and larger branches only, and that chiefly from artificial apertures, whereas it flows from the Fraxinus through every little cranny, and bursts through the large pores spontaneously. The different qualities of manna are from different parts of the tree. (Fothergill.) (L.)

Phillyrea. (De Cand. viii. 292.)

Phillyrea media. *Phillyrea, Mock privet.* South Europe.
Leaves astringent, cleansing ulcers of the mouth.

Syringa. (De Cand. viii. 282.)

**Syringa vulgaris. (Bot. Mag. 183.) *Common lilac.* Fl. lilac or white. June. Large shrub. Native of Persia.
This plant has some reputation as a cure for intermittent fevers. The unripe fruit is singularly bitter, without any acrimony; and, according to Curveiller, an extract of it is a remarkably good tonic and febrifuge. (L.)

Order 103. JASMINEÆ. (De Cand. viii. 300.)

Flowers hermaphrodite, rarely polygamous, regular; *calyx* persistent, toothed or lobed; lobes 5—8; *corolla* gamopetalous, regular, 4—5—8 lobed, or partite, hypocrateriform lobes imbricated in æstivation; *stamens* two, inserted into the corolla; *filaments* short, *anthers* two-celled, longitudinally dehiscent, turned inwards; *ovary* destitute of a hypogynous disk, two-celled, with one-seeded cells, the ovules in which are erect; *style* simple; *stigma* two-lobed; *fruit* either dry, dehiscent, or indehiscent, and 1—2 celled, 1—2 seeded, or fleshy and 1—2 celled; *seeds* covered with a membranaceous integument; *albumen* white, fleshy or horny, sometimes very thin; *radicle* cylindrical, turned towards the hilum. *Shrubs,* having usually twining stems; *leaves* opposite or alternate, mostly compound, ternate or pinnate, with an odd one, sometimes simple, the petiole almost always having an articulation; *flowers* opposite in corymbs.

Jasminum. (De Cand. viii. 301.)

Jasminum grandiflorum. Abyssinia.
Yields an essential oil.

**Jasminum officinale. *Jasminum, White jasmine.* Fl. white. July. Climbing shrub. Native of India.
Flowers recommended in shortness of breath, and schirrus of the womb. A perfumed oil is prepared from this and the fixed oil of the Moringa. (O'Sh.)

Jasminum sambac. *Mogorium sambac.* East Indies.
Yields an essential oil.

Order 104. APOCYNACEÆ. (De Cand. viii. 317.)

Calyx gamosepalous, five-divided, persistent; *corolla* gamopetalous, hypogynous, five-lobed, regular, imbricate, or very rarely valvate in æstivation, deciduous; *stamens* five, inserted into the base of the corolla, and alternate with its segments; *filaments* connate, or distinct; *anthers* two-celled, dehiscing longitudinally; *ovaries* 2, or 1—2 celled, polyspermous; *styles* two or one; *stigma* one, capitate; *fruit* a follicle, capsule or drupe, or berry, double or single; *seed* inserted along the margin of the follicle, with fleshy or cartilaginous albumen; *testa* simple; *embryo* foliaceous; *radicle* superior, turned towards the hilum. *Trees* or *shrubs,* usually milky, with opposite entire *leaves,* and an inflorescence tending to corymbose.

ALLAMANDA. (De Cand. viii. 318.)

ALLAMANDA CATHARTICA. *A. grandiflora, Orelia gradiflora,* Cayenne, Brazil.

An infusion of the leaves is considered a valuable cathartic medicine in moderate doses, especially in the cure of painter's colic; in over doses it is violently emetic and purgative. (L.)

ALYXIA. (De Cand. viii. 345.)

ALYXIA STELLATA. *A. aromatica, Gynopogon stellata.* Malay, Archipelago, South Sea islands.

Bark aromatic, with similar effects to those of Canella alba, and Drymis Winteri, for which it may be substituted; lately introduced into German practice, as a remedy for chronic diarrhœa and nervous complaints; the bark has the odour of melilot, and traces of benzoic acid have been found in it. (L.)

APOCYNUM. (De Cand. viii. 439.)

APOCYNUM ANDROSÆMIFOLIUM. *American dog's bane.* United States.

Root, *Apocynum, P. U. S.*, emetic. (G.) Root with an unpleasant intensely bitter taste; acts as an emetic when recent; in small doses is a useful tonic. (L.)

APOCYNUM CANNABINUM. North America.

Is also emetic, and in decoction diuretic and diaphoretic. (L.)

APOCYNUM INDICUM.

Young shoots eatable.

APOCYNUM VENETUM. *Venetian dog's bane.* North of China.

Leaves, mixed up with grease, used to poison animals.

CAMERARIA. (De Cand. viii. 388.)

CAMERARIA LATIFOLIA. *Bastard manchineel tree.* West Indies.

It is probable that this plant, which is very abundant in Cuba, might prove a valuable source of caoutchouc, as the milk gushes out of the smallest wound, and readily thickens; it is said to be so poisonous, as to be used by the West Indian natives to envenom their arrows. (L.)

CARISSA.

CARISSA CARANDUS. India.

The acid fruit affords the well-known and favourite Caranda jelly of our tables. (O'Sh.)

CERBERA. (De Cand. viii. 352.)

CERBERA MANGHAS. East Indies.

Bark purgative. (G.) The kernels are emetic and poisonous; the milky sap is employed as a purgative; according to

Waitz, the leaves and bark are so similar to senna in their action, that they are substituted for it in Java. (L.)

ECHITES. (De Cand. viii. 446.)

ECHITES SYPHILITICA. Surinam.

Used in syphilis. (G.) A decoction of the herb antisyphilitic. (D. C.)

HASSELTIA. (Lindl. Med. Bot. 536.)

HASSELTIA ARBOREA. Java.

In Java, the milk obtained from the trunk by incision, mixed with honey, and reduced with boiling water, is employed as a powerful drastic for destroying the tape-worm; it is, however, apt to produce inflammation of the intestines, and is even in some cases fatal. (L.)

HOLARRHENA. (De Cand. viii. 413.)

HOLARRHENA ANTIDYSENTERICA. *Echites antidysenterica.* East Indies.

Bark, *Tellicherry bark*, *Conessi bark*, *Codaga pala*, bitter, used in dysentery; seeds vermifuge and antispasmodic, used in cholera. (G.)

HOLARRHENA PUBESCENS. India.

Qualities the same as the preceding species. (O'Sh.)

ICHNOCARPUS. (De Cand. viii. 434.)

ICHNOCARPUS FRUTESCENS. *Apocynum frutescens.* Ceylon.

Sometimes used in India as a substitute for sarsaparilla, according to Professor Royle; also mentioned as a medical plant by Afzelius in his Remedia Guineensia.

NERIUM. (De Cand. viii. 419.)

NERIUM ODORUM. *N. odoratum.* India, China.

The bark of the root, and the sweet smelling leaves are considered by the native Indian doctors as powerful repellents, applied externally; the root taken internally acts as a poison. (L.)

NERIUM OLEANDER. *Rose bay, South Sea rose.* South of Europe.

Internally poisonous, externally astringent, antipsoric, and sternutatory; wood used to clear muddy water; leaves acrid, appear to contain free gallic acid, poisonous, infused in oil used in itch. (G.) Very acrid; a decoction of its leaves or bark forms an acrid stimulating wash, much employed by poor people in the south of France to cure the itch, and to destroy cutaneous vermin; the peasants in the neighbourhood of Nice use the powdered bark and wood to poison rats. (L.)

OPHIOXYLON. (De Cand. viii. 342.)

OPHIOXYLON SERPENTINUM. East Indies.

Root, *Radix mustela*, purgative, bitter, tonic, febrifuge, used in the bites of serpents. (G.) Root employed by the Telinga physicians of India as a febrifuge and alexipharmic, and also to promote delivery in tedious cases. (L.)

Plumieria. (De Cand. viii. 389.)

Plumieria acutifolia. *P. acuminata*, *P. obtusa.* Malay Archipelago.

Root used as a cathartic in Java. (L.)

Plumieria drastica. Brazil.

Said to be a powerful purgative.

Plumieria rubra. Jamaica and Surinam.

Milk excessively corrosive.

Strychnos. (L. Med. Bot. 528.)

Strychnos colubrinum. Malabar.

Wood, *Snake wood*, *Lignum colubrinum*, occasions tremblings, is emetic, vermifuge, very bitter, and serviceable in stubborn intermittents and chronic diarrhœa. (G.) This is the most esteemed of all the Ligna colubrina by the natives of India, and fetches so high a price among them, as rarely to find its way into Europe; it is the true *Pao de cobra* of the Portuguese; the wood of the root is considered an infallible remedy for the bite of the Naga, or Cobra de Capella, as well as for that of every other venomous snake; it is applied externally, and at the same time given internally; it is also used in substance for the cure of intermittent fevers. Blume considers that several different kinds of Strychnos are brought into the market under the name of Lignum colubrinum, to represent this, especially that of S. nux vomica, and probably of S. minor. (L.)

Strychnos ignatia. *Ignatia amara*, *Ignatiana philippinica*, *St. Ignatius' bean.* The Philippines.

Seed, *Faba sancti Ignatii*, has the form of a nut, excessively bitter; occasions giddiness, convulsions, and vomiting, but has been used in small doses to cure agues. (G.) Used successfully in India as a remedy for cholera, under the name of *Paputa;* but giddiness and convulsions are known to follow its exhibition, if given in an over dose. (L.) Deemed also an efficacious vermifuge. (O'Sh.)

Strychnos ligustrina. *S. colubrina* of some authors. Malayan Archipelago.

This yields the real ancient *Lignum colubrinum* of Timor, once held in the highest estimation as a remedy for paralysis of the lower extremities, and old cachectic disorders, but now omitted from modern practice; M. Waitz, a Dutch practitioner in Java, is stated by Blume to report most favourably of its effects as an anthelmintic, in cases of paralysis of the lower extremities, and in blennhorhœa faucium et laryngis, diseases to which Europeans are very subject in Java. (L.)

STRYCHNOS NUX VOMICA. East Indies.
Ripe pulp eatable in small quantity; seeds, *nux vomica*, horny, require rasping or roasting, very bitter, emetic and poisonous to most animals; they act as an excitant upon the nervous system, producing tetanus; used in paralysis with some success, and in chronic diarrhœa and chronic dysentery; said to render persons insensible to the poison of serpents; the active principles of it are *strychnia* and *brucea;* its action appears to be directed towards the spinal cord, and to have no influence on the brain; it is found useful in paralytic affections of the voluntary muscles. (G.) The seeds are extremely poisonous, in large doses producing extraordinary rigidity and convulsive contractions of the muscles previous to death; in very small and repeated doses it promotes the appetite, assists the digestive process, increases the secretion of urine, and sometimes acts slightly on the bowels; it is employed medicinally in paralysis, dyspepsia, dysentery, affections of the nervous system, &c., and appears to be very active in removing impotence; it appears, however, that virility is preserved no longer than the use of the drug is persevered in; see Pereira, Med. Gaz. xix. 440. The bark of this plant has been sold in Europe as a sort of angostura bark, and obtained the name of *False angostura;* it was at one time assigned to Brucea antidysenterica, but Guibourt suspected it to be produced by some plant allied to Strychnos; M. Batka, of Prague, referred it to S. nux vomica, and Dr. Christison has found it identical with bark of Strychnos nux vomica, obtained from India for comparison; Blume is of opinion that a great part of the Lignum colubrium of commerce consists of the thick roots and wood of the middle-sized branches of this species more than of any other; the poisonous principle in this, and other plants of the genus, is the Strychnia of chemists. (L.)

STRYCHNOS POTATORUM. *Titan cotte, Clearing nut.* India.
Wood and seeds very bitter, used to render muddy water clear; flowers aromatic; ripe fruit emetic; young fruit preserved used as a sweetmeat. (G.) The ripe seeds are dried and sold in every market to clear muddy water; the natives never drink clear well-water, if they can get pond or river water, which is always more or less impure according to circumstances; one of the seeds is well rubbed for a minute or two round the inside of the vessel, generally an unglazed earthen one, containing the water, which is then left to settle; in a very short time the impurities fall to the bottom, leaving the water clear and perfectly wholesome. These seeds are constantly carried by the more provident part of our officers and soldiers in time of war, to enable them to purify their water. The natives of India eat the pulp of the fruit when

ripe; Dr. Roxburgh found it disagreeable. (L. ex Roxb.) Ainslie informs us that the ripe fruit is deemed emetic by the natives of southern India when given in powder to the quantity of about half a tea-spoonful. (O'Sh.)

STRYCHNOS PSEUDO QUINA. *Quina do Campo.* Brazil.

Considered by Aug. de St. Hilaire to be the best febrifuge in Brazil. With the exception of the fruit, which is eaten by children without danger, all the parts, especially the bark, are extremely bitter, and rather astringent; it is universally employed instead of cinchona, and is asserted to be fully equal to Peruvian bark in the cure of the intermittents of Brazil. Vauquelin analyzed the bark, and could find in it neither brucine, strychnine, or quinine. (L.)

STRYCHNOS TIEUTE. *Tshettek*, or *Tjettek.* Java.

From the bark of the root there is prepared, in Java, one of the most dangerous of known poisons, acting like nux vomica, only in a more intense and violent manner; it is called *Tjettek* and *Upas Raja.* (L.)

STRYCHNOS TOXIFERA. Guayana.

This plant has been ascertained by Mr. Schomburgh to furnish the basis of a celebrated poison called *Wooraly*, *Woorari*, *Ourari*, or *Urari*, in Guayana; according to Dr. Hancock, the bark applied externally is a good remedy for foul ulcers,—in his opinion it is one of the most potent sedatives in nature, and could it be safely managed, would no doubt become a valuable remedy in the treatment of convulsive and spasmodic disorders. *Med. Gaz.* xx. 281. (L.)

TANGHINIA. (De Cand. viii. 355.)

TANGHINIA VENENIFERA. *Cerbera tanghin, C. venenifera.*

The kernel of the fruit is a deadly poison; although not longer than an almond, it is sufficient to destroy twenty people. It was used in Madagascar as an ordeal, but the practice is now discontinued. There is some doubt, however, whether this plant may not be the same as Cerbera manghas. (L.)

TABERNÆMONTANA. (De Cand. viii. 361.)

TABERNÆMONTANA ARCUATA. Peru.

Stem lactescent, exudes resin.

THEVETIA. (De Cand. viii. 343.)

THEVETIA AHOUAI. *Cerbera ahouai.* Brazil.

Seeds, *nux ahouai*, violently emetic. (G.) The seeds are very poisonous; bark and sap are emetic and narcotic. (L.)

THEVETIA NERIIFOLIA. *Cerbera thevetia.* West Indies.

Has a dangerous venomous milk; the bark is bitter and cathartic, and is reported to be a powerful febrifuge, two grains only being affirmed to be equal to an ordinary dose of cinchona. (L.)

URCEOLA. (De Cand. viii. 358.)

URCEOLA ELASTICA. Sumatra and Pulopenang.

Yields elastic gum. (G.) This plant yields a very fine kind of caoutchouc, firm, very elastic, scentless, and possessing all the qualities of the best samples of that substance. (L.)

VAHEA. (De Cand. viii. 327.)

VAHEA GUMMIFERA. Madagascar.

Yields caoutchouc.

VINCA. (De Cand. viii. 381.)

*VINCA MAJOR. (E. B. 514.) *Greater periwinkle.*

Fl. bluish purple. May. Perennial. Woods and thickets.

*VINCA MINOR. (E. B. 917.) *Vinca pervinca, Lesser periwinkle.*

Fl. blue or white. May, June. Perennial. Hedges and banks in woods.

Leaves astringent, used in tanning, antidysenteric, contracting and strengthening the sexual organs; in hot climates the plants of this genus acquire poisonous qualities. (G.)

VINCA PUSILLA. *V. parviflora.* East Indies.

Applied in India as an external stimulant in cases of lumbago. (L. ex Roq.)

WILLUGHBEIA. (De Cand. viii. 321.)

WILLUGHBEIA EDULIS. East Indies.

Every part of the plant, on being wounded, discharges copiously a very pure white viscid juice, which is soon, by exposure to the air, changed into an indifferent kind of caoutchouc. The fruit is eaten by the natives of the places where it grows, and is by them reckoned good. (L.)

WRIGHTIA. (De Cand. viii. 404.)

WRIGHTIA ANTIDYSENTERICA. *Nereum antidysentericum, Echites antidysenterica.* (Roxb.) East Indies.

This bark is called *Conessi* in commerce, and has been introduced into European practice on account of its astringent febrifuge qualities. (L.) For conessi bark, see also Holarrhena. The seeds are intensely bitter, and used as a vermifuge; conessi bark has been given with much alleged advantage in chronic dysentery; the infusion seems the best form; dose 1 oz. thrice daily. (O'Sh.)

ORDER 105. ASCLEPIADEÆ. (De Cand. viii. 490.)

Calyx five-cleft, persistent; *corolla* monopetalous, hypogynous, five-lobed, regular, with imbricated, very seldom valvular æstivation, deciduous; *stamens* five, inserted into the base of the corolla, alternate with the segments of the limb; *filaments* usually connate; *anthers* two-celled, sometimes almost four-celled, in consequence of their dissepiments being nearly complete; *ovaries* two; *styles* two, often very short; *stigma* common to both; *styles* dilated, five-cornered, with corpusculiferous angles; *follicles* two, one of which is sometimes abortive; *placenta* attached to the suture, finally separating; *seeds* numerous, imbricated, pendulous, almost always comose at the hilum; *albumen* thin; *embryo* straight; *cotyledons* foliaceous; *radicle* superior; *plumule* inconspicuous. *Shrubs*, or occasionally *herbaceous plants*, almost always milky, and often twining; *leaves* entire, opposite, sometimes alternate, or whorled, having cilia between their petioles in lieu of stipules; *flowers* somewhat umbelled, fascicled, or ramose, proceeding from between the petioles. (Lindl. ex R. Rrown.)

ASCLEPIAS. (De Cand. viii. 564.)

ASCLEPIAS CORNUTI. *Apocynum Syriacum, Asclepias Syriaca, Common silk weed.* North America.

Milk of the plant a drastic poison; leaves resolvent; root emetic.

ASCLEPIAS CURASSAVICA. *Bastard ipecacuanha, Redhead.* West Indies and Tropical America.

Root whitish, mixed with ipecacuanha, less active; expressed juice of the plant emetic, coch. maj. j. to ij., or as a clyster in bleeding piles; bruised leaves applied to fresh wounds. (G.) This plant is called *Wild ipecacuanha* in the West Indies, where it is employed by the negroes as an emetic; the roots, which are the parts used, appear to be also purgative; a decoction is said to be efficacious in gleets and fluor albus. (L.)

ASCLEPIAS INCARNATA. *Flesh-coloured asclepias.* North America.

Root diuretic.

ASCLEPIAS TUBEROSA. *Butterfly weed, Pleurisy root.* United States.

Root diuretic, purgative. (G.) Root expectorant and diaphoretic, employed successfully in catarrh, pneumony, and pleurisy; Bigelow says he is persuaded of its usefulness as a mild tonic and stimulant. (L.)

ASCLEPIAS DECUMBENS (Linn.) is probably a mere variety of the last, and has similar properties. (L.)

Root, *Butterfly root*, diaphoretic, slightly stimulant, also purgative. (G.)

CALOTROPIS. (De Cand. viii. 535.)

CALOTROPIS GIGANTEA. *Asclepias gigantea, Ericu.* India.

Milk inspissated, used in lepra; inner rind of the root, *madar, mudar*, in syphilis and tape-worm, gr. v. twice a day. (G.) A plant of great importance in Indian medicine, employed in epilepsy, hysterics, convulsions from coitus immediately after bathing, spasmodic disorders, such as locked-jaw, convulsions in children, paralytical complaints, cold sweats, poisonous bites, and venereal complaints. (Roxburgh.) Under the names of *mador*, *mudar*, *akum*, and *yercund*, the root and bark, and especially the inspissated juice, are used as powerful alteratives and purgatives; it is especially in cases of leprosy, elephantiasis, and intestinal worms, that it has been found important; its activity appears owing to the presence of *mudarine*, a singular substance possessing the property of coagulating by heat and becoming again fluid by exposure to cold. (L.) Emetic, alterative, diaphoretic, and purgative. (O'Sh.)

Calotropis procera. *Asclepias procera.* Arabia, Persia. Juice extremely acrid; Prosper Alpinus says it was administered successfully as a remedy for ringworm and other cutaneous affections; also a powerful depilatory; according to Professor Royle, this, or an allied species, produces a kind of manna called *Shukhr ool askur*. (L.)

Camptocarpus. (De Cand. viii. 493.)

Camptocarpus mauritianus. *Cynanchum mauritianum.* Isles of France and Bourbon.

Root, *Isle of France ipecacuanha.*

Cynanchum. (De Cand. viii. 547.)

Cynanchum acutum. Var. *α*. *C. monspeliacum, European scammony.* Sea-coast of Italy, Spain, &c.

Yields *French scammony.* (G.) The inspissated juice is drastic, and known officinally under the name of *Montpelier scammony*. (L.)

Cynanchum ovalifolium. (L. Med. B. 542.) Penang. Yields an excellent caoutchouc at Penang, according to Dr. Wallich. (L.)

Cynanchum vincetoxicum. (L. Med. Bot. 542.) *Asclepias vincetoxicum, Hirundinaria, Swallow-wort.* Europe.

Root, *German contrayerva*, irritating, forcing out a sweat, alexiterial and antihydropic. (G.) An emetic and purgative, once celebrated as an antidote to poisons, whence its name. (L.)

Gymnema. (De Cand. viii. 621.)

Gymnema lactiferum. *Asclepias lactifera.* Ceylon. Milk used as food.

Hemidesmus. (De Cand. viii. 494.)

Hemidesmus indicus. *Periploca Indica.* India.

Root, *East Indian sarsaparilla*, alterative. (G.) The sarsaparilla of India is chiefly the root of this species; a decoction of it is prescribed by European practitioners in cutaneous diseases, scrofula, and venereal affections. (Ainslie.) It is sai to be quite as efficient a medicine as the best sarsaparilla of America, and is probably the drug from which Mr. Garden obtained what he calls Smilasperic acid; a great deal of it is consumed in London now, as a very fine kind of sarsaparilla. (L.) It acts as a diuretic, diaphoretic, and tonic, in the most satisfactory manner. (O'Sh.)

HOYA. (De Cand. viii. 634.)

HOYA VIRIDIFLORA. *Apocynum tiliæfolium, Asclepias volubilis.* East Indies.

The root and tender stalks sicken and promote expectoration; the leaves, peeled and dipped in oil, are much esteemed by the natives of India as a discutient in the early stages of boils; when the disease is more advanced they are employed in the same way to promote suppuration. (L. ex Wight.)

OXYSTELMA. (De Cand. viii. 542.)

OXYSTELMA ESCULENTUM. *Asclepias rosea, Periploca esculenta.* East Indies.

Young shoots esculent. (G.) Said by De Candolle to be eatable, but Roxburgh says he did not find that the natives ever ate it, and Dr. Wight makes the same statement, adding, however, that in decoction it is used for a gargle for aphthous affections of the mouth and fauces. (L.) Cattle eat the roots. (O'Sh.)

PERGULARIA. (De Cand. viii. 618.)

PERGULARIA EDULIS.

Young shoots eatable. (G.) Referred by De Candolle to a doubtful species of Ceropegia.

PERIPLOCA. (De Cand. viii. 497.)

PERIPLOCA GRÆCA. *Scammony senna.* South of Europe.

Leaves mixed with senna, more pointed and longer.

PIARANTHUS. (De Cand. viii. 650.)

PIARANTHUS INCARNATUS. *Stapelia incarnata.* Cape of Good Hope.

Herb esculent.

SARCOSTEMMA. (De Cand. viii. 537.)

SARCOSTEMMA APHYLLUM. *Asclepias aphylla.* Africa.

SARCOSTEMMA STIPITACEUM. *A. stipitacea.* Arabia.

Young shoots esculent.

SARCOSTEMMA GLAUCUM. South America.

Employed in Venezuela as an emetic in room of ipecacuanha. (L.)

SECAMONE. (De Cand. viii. 501.)

SECAMONE ALPINI. *Periploca scammonium.* Egypt.

Roots yield by incision *Smyrna scammony.* (G.) A drastic, said by some to yield Smyrna scammony, but this is very doubtful. (L.)

SECAMONE EMETICA. *Periploca emetica.* India. Root used for ipecacuanha. (G.) Roots acrid and emetic. (L.)

SOLENOSTEMMA. (De Cand. viii. 533.)

SOLENOSTEMMA ARGEL. *Cynanchum argel.* Upper Egypt. The leaves and whole plant powerfully purgative, and even drastic; the former are mixed very largely with senna, but whether intentionally, or through carelessness, does not appear; they form the bulk of many samples of Alexandrian senna, but do not occur in those from Tinnivelly; if it were for no other reason than its being free from argel leaves, the Tinnivelly senna ought to be preferred for medical use, for there is no doubt the griping and unpleasant effects of common senna are attributable to their presence. (L.)

TYLOPHORA. (De Cand. viii. 606.)

TYLOPHORA ASTHMATICA. *Asclepias asthmatica, Cynanchum vomitorium, C. ipecacuanha, C. tomentosum.* East Indies. Root, *Coromandel* and *Ceylon ipecacuanha*; young shoots esculent. (G.) Root acrid, used on the coast of Coromandel as a substitute for ipecacuanha; Dr. Roxburgh found it to answer the same purpose as that drug, and had also very favourable reports of it from others; Dr. J. Anderson, physician general at Madras, confirms this; it was used with great success in a dysentery that was in his time epidemic in the British camp; no doubt it is one of the most valuable medicines in India; in large doses it is emetic, in smaller doses often repeated, it acts as a cathartic; Burnett states it to be valuable as a sudorific, and to be peculiarly beneficial in humoral asthma. (L.)

TYLOPHORA LÆVIGATA. *Cynanchum lævigatum, C. rindera, Mattia lævigata, Rindera lævigata, R. tetrapsis.* Root, *White Bengal ipecacuanha.*

ORDER 106.—SPIGELIACEÆ. (Lindl. Nat. Syst. 298, Endl. Gen. Pl. 606.)

Calyx inferior, regularly five parted; *corolla* regular, with five lobes, which have a valvate æstivation; *stamens* five, inserted into the corolla, all in the same line, alternate with its lobes; *pollen* three-cornered, with globular angles; *ovary* superior, two-celled; *style* articulated with it, inserted; *stigma* simple; *fruit* capsular, two-celled, two-valved, the valves turned inwards at the margin, and separating from the central placenta; *seeds* several, small; *testa* simple; *embryo* very minute, lying in a copious fleshy albumen, with the radicle next the hilum. *Herbaceous plants*, or *under shrubs*: *leaves* opposite, entire, with stipules, or a tendency to produce them; *flowers* arranged in one-sided spikes; *pubescence* simple or stellate.

Spigelia. (Endl. Gen. Pl. 607.)

Spigelia anthelmia. West Indies.

Spigelia marilandica. *Lonicera marilandica, Carolina pink root, Worm grass. Worm seed.* North America.

Herbs bitter, used to expel lumbrici from children; dose of the powdered root or herb gr. x. to ʒj. night and morning. (G.) Both root and leaves of S. Marilandica are active anthelmintics; their efficacy is much impaired by keeping; also purgative and narcotic in a slight degree. It appears to be an acrid narcotic, and is apt to produce very unpleasant symptoms after being exhibited; dimness of sight, giddiness, dilated pupil, spasms of the muscles of the eyes, and even convulsions, are reported by Burton to have been brought on by it. (L.)

Order 107.—GENTIANEÆ. (De Cand. Bot. Gal. 325.)

Calyx gamosepalous, divided, persistent; *corolla* gamopetalous, regular, often marescent, limb partite, equal; lobes imbricated in æstivation, equal in number to the segments of the calyx, generally five; *stamens* inserted on the corolla, as many as, and alternate with, its segments; *ovary* free; *styles* one, or rarely two; *stigma* simple, or two-lobed; *capsule* many-seeded, 1—2 celled, bivalved, the valves dehiscent at the apex, with the margin bent inwards, which in the two-celled ones forms a dissepiment; *seeds* inserted on the margin of the valves; *embryo* straight, in the centre of a fleshy albumen; *radicle* generally inferior. Bitter glabrous *herbs*, with opposite, generally sessile leaves.

Agathodes. (Endl. Gen. Plant, p. 601.) *Agathotes.* (Lindl.)

Agathodes chirayta. *Gentiana chirayta, Chirayit, Creata.* Nepal and north of India.

An excellent tonic bitter; the whole plant is pulled up when the flowers begin to decay, and dried for use; its febrifugal properties are in high estimation with European practitioners in India, who use it instead of cinchona, when the latter is not to be procured. (L.)

Chlora. ((De Cand. Bot. Gal. 325. Endl. Gen. Pl. 603.)

*Chlora perfoliata. (E. B. 2469.) *Gentiana perfoliata, Yellow centaury.*

Fl. yellow. July, September. Annual. Chalky and clayey pastures.

Root bitter, tonic. (G.) Qualities similar to those of gentiana and erythræa, but weaker. (L. ex Smith.)

Cicendia. (Lindl. Med. Bot. 520. Endl. Gen. Pl. 602.)

Cicendia hyssopifolia. *Exacum hyssopifolia, Gentiana H.* East Indies.

The whole plant is somewhat bitter, though much less so than many of its natural allies; employed by the natives of

India as a stomachic, in decoction and powder; thus used it is said to act also as a laxative. (L. ex Wight.)

Coutoubea. (Endl. Gen. Pl. 604.)

Coutoubea ramosa.

Coutoubea spicata. *C. alba.* Guiana,

Febrifuge and stomachic. (G.) The whole plant very bitter; employed successfully in promoting the menstrual discharge, in various stomachic complaints, in visceral obstructions, and as an anthelmintic. (L. ex Aublet.)

Erythræa. (Endl. Gen. Pl. 602.) Chironia (De Cand. Bot. Gal. 327.)

*Erythræa centaurium. (E. B. 417.) *Centaurium minus, Chironia centaurium, Gentiana centaurium, Lesser centaury.*

Fl. rose-coloured. August. Annual. Dry pastures. Common.

Flowering tops, *Centauria cacumina*, bitter, febrifuge, and vermifuge; used against obstructions, jaundice, weaknesses, hydrophobia; sometimes cathartic; externally in decoction destroys lice and cures the itch; root more powerful than the flowers. (G.) This wild plant possesses all the essential properties of the gentian of the shops, and although not used professionally, is a very valuable native medicine; in the places where it grows, it is carefully collected for use in rustic pharmacy. (L.)

Frazera. (Endl. Gen. Pl. 601.)

Frazera carolinensis. *F. walteri, Muretta columbo.* United States.

Root, *American columbo, Frasera, P. U. S.*, used as calumba root. (G.) The root is a pure, powerful, and excellent bitter, destitute of aroma, and fully equal to gentian; when fresh, it is reported to be emetic and cathartic; the roots have been imported into Europe as a sort of calumba, and have acquired the name of *American calumba.* (L.)

Gentiana. (De Cand. Bot. Gal. 326. Endl. Gen. Pl. 600.)

*Gentiana amarella. (E. B. 236.) *Gentianella autumnalis, Autumnal gentian, Bastard gentian, Fell wort.*

Fl. pale dingy purple. April, October. Annual. Subalpine pastures and chalky pastures.

Bitter, used as a tonic. (G.) One of the British substitutes for the gentian of the shops. (L.)

*Gentiana acaulis. (E. B. 1594.) *Gentiana grandiflora, Dwarf gentian.*

Fl. purplish-blue. June, July. Perennial. Doubtful native.

Bitter, used as a tonic. (G.)

*GENTIANA CAMPESTRIS. (E. B. 237.) *Field gentian.*

Fl. pale and dull purple. August, October. Annual. Hilly pastures.

A substitute for the officinal gentian. (L.)

GENTIANA CATESBÆI. *Blue gentian.* North America.

Roots bitter, tonic. (G.) Dried root mucilaginous and sweetish, then intensely bitter, approaching nearly to G. lutea. It is considered the best substitute in North America for that species. (L.)

GENTIANA KURROO. *Pneumonanthe kurroo.* Himalaya mountains.

Root used like gentian in the north of India. (L.)

GENTIANA LUTEA. *Common gentian, Great yellow gentian.* Middle of Europe.

The root of this species furnishes the gentian of the shops; a valuable bitter drug employed extensively in certain forms of dyspepsia, in intermittents, and as an anthelmintic; in full doses it is apt to relax the bowels, and it does not always agree with the stomach; in fact, it possesses a volatile principle, capable of producing nausea and a kind of intoxication; the root contains a good deal of sugar and mucilage, which enables the Swiss to prepare from it a liqueur held in high esteem among that people. (L.)

GENTIANA PANNONICA. *G. punctata.* Alps of Europe.

Used as a substitute for G. lutea in the shops of Bavaria and Austria. The roots are extremely bitter, and not inferior to that species. (L.)

*GENTIANA PNEUMONANTHE. (E. B. 28.) *Calathian violet, Marsh gentian.*

Fl. deep blue. August, September. Perennial. Moist heaths.

Bitter, used as a tonic.

GENTIANA PUNCTATA. (Linn.) Alps of Europe.

Collected on the alps of Europe in great quantity, and sold for G. lutea, to which it is not inferior in quality. (L.)

GENTIANA PURPUREA. Alps of Norway, Switzerland, and Savoy.

Employed in continental practice. (L.)

*GENTIANA VERNA. (E. B. 493.) *Gentianella verna, Gentianel, Spring alpine gentian.*

Fl. bright blue. April, May. Perennial. Alpine pastures.

Bitter, used as a tonic.

LISIANTHUS. (Endl. Gen. Pl. 603.)

LISIANTHUS PENDULUS. Brazil.

The Brazilians make use of the root, which is extremely bitter, in decoction as a febrifuge. (L. ex Martius.)

MENYANTHES. (Endl. Gen. Pl. 605. De Cand. Bot. Gal. 325.)

*MENYANTHES TRIFOLIATA. *Trifolium paludosum, Bog bean, Common buckbean, Marsh trefoil.*

Fl. white, tipped externally with red. June, July. Perennial. Hampstead heath.

Bitter, astringent; leaves dried and powdered, ʒj. purge and vomit, used as a vermifuge; an infusion is extremely bitter, and useful in rheumatism and dropsy; substituted for hops in brewing, 2 oz. being equal to 1 lb. of hops. (G.) All the plant, especially the root, intensely bitter; reckoned one of the most valuable of tonics; large doses produce vomiting, purging, and frequently powerful diaphoresis; recommended in intermittent and remittent fevers, gout, herpetic complaints, rheumatism, dropsy, scurvy, and worms. (L.)

SABBATIA. (Endl. Gen. Pl. 603.)

SABBATIA ANGULARIS. *Chironia angularis, American centaury, Sabbatia, P. U. S.* United States.

Root extremely bitter, used as a tonic. (G.) One of the most pure and simple bitters; extensively employed in North America in both intermittent and remittent fevers. (L.)

SABBATIA DECUSSATA. North America.

SABBATIA GRACILIS. North America.

Have similar properties.

VILLARSIA. (Endl. Gen. Pl. 605. De Cand. Bot. Gal. 325.)

*VILLARSIA NYMPHŒOIDES. (E. B. 217.) *Nymphæa lutea minor, Menyanthes nymphæoides, Dwarf water lily. Fringed bog bean, Villarsia.*

Fl. yellow. July, August. Perennial. Deep rivers and pools in the east of England.

Properties the same as Menyanthes trifoliata. (G.) Stems bitter, tonic, and febrifugal. (L.)

ORDER 108.—BIGNONIACEÆ. (R. Brown Prod. 471.)

Calyx gamosepalous; *corolla* hypogynous, generally irregular, 4—5 lobed; *filaments* of the stamens five, unequal, 2—4 being antheriferous, the anthers two-celled; *ovary* surrounded by a glandular disk, two-celled, many-seeded; *style* one; *stigma* bilamellar; *capsule* two-valved, two-celled; *seeds* transverse, compressed, generally winged; *albumen* none; *embryo* straight, foliaceous; *radicle* centrifugal. *Trees* or *shrubs*, often twining or climbing; *leaves* opposite, very rarely alternate, compound, or occasionally simple, without stipules; *inflorescence* terminal, somewhat panicled.

BIGNONIA. (Endl. Gen. Pl. 713.)

BIGNONIA ANTISYPHILITICA. Brazil.

The bark of the younger branches of this tree is considered in Brazil one of the most powerful remedies against syphilitic swellings, which are of a malignant character; the decoction is chiefly used, and also the bark dried and pounded externally. (L.)

Bignonia echinata. Guiana.

Bignonia radicans. North America.

Roots vulnerary, sudorific; employed in America against the bite of venomous animals. (G.)

Bignonia leucoxylon. West Indies.

Alexiterial, used against the poison of the Manchineel apple. (G.)

Catalpa. (Endl. Gen. Pl. 711.)

Catalpa syringifolia. *Bignonia catalpa.* North America.

A decoction of the pods is used in Italy as a remedy for catarrhal dyspnœa and coughs. (*Gard. Mag.* xiii. 524.) According to Kœmpfer, a nearly allied species, or perhaps the same, has extremely bitter leaves and bark, and a decoction of the pods is employed in asthmatic complaints; the leaves are also used for fomentations. (L.)

Sacaranda. (Endl. Gen. Pl. 711.)

Sacaranda ovalifolia. *S. Brasiliensis, Bignonia Braziliensis.* Brazil.

Wood, green ebony, used in dyeing.

Sesamum. (Endl. Gen. Pl. 709.)

Sesamum indicum. East Indies.

Has mucilaginous leaves, and the seeds, like linseed, yield a mucilaginous meal, used in India for poultices. (L.)

Sesamum orientale. *Gingelly, Guiggiolana, Jugeoline, Vangloe.* East Indies.

Seeds parched and ground, eaten, or mixed whole with bread; yield oil. (G.)

Order 109.—POLEMONIDEÆ. (De Cand. Bot. Gal. p. 329.)

Calyx gamosepalous, five partite, persistent, sometimes irregular; *corolla* regular, five-lobed; *stamens* five, inserted into the tube of the corolla, and alternate with its segments; *ovary* superior, free, three-celled; *style* simple; *stigma* trifid; *capsule* covered by the persistent calyx, three-celled, three-valved, few or many-seeded, valves having a prominent rib or septum in the middle, which extends to the central trigonal axis; *seeds* often enveloped in mucus; *embryo* straight; *albumen* horny; *radicle* inferior; *cotyledons* elliptical, foliaceous. *Herbs*, with opposite, or occasionally alternate leaves; *stem* occasionally climbing.

POLEMONIUM. (De Cand. Bot. Gal. 329.)

*POLEMONIUM CÆRULEUM. (E. B. 14.) *Greek valerian, Jacob's ladder.*

Fl. blue. Banks and bushy places, Derbyshire and York; rare.

Root astringent, antidysenteric, and vulnerary.

ORDER 110.—CONVOLVULACEÆ. (Endl. Gen. Pl. 651.)

Calyx monophyllous, *persistent*, in five divisions, remarkably imbricated; *corolla* monopetalous, hypogynous, regular, deciduous, limb five-lobed, plaited; *stamens* five, inserted into the tube of the corolla; *ovary* simple, free, supported on a hypogynous disk, 2—4 celled, few-seeded; *style* simple, often divided; *capsule* 1—4 celled, containing 1—2 seeds, attached towards the base of the partitions, the valves fitting at their edges to the angles of the partitions: *cotyledons* flat, and plicate; *embryo* curved, placed in the centre of a mucilaginous albumen. *Herbaceous plants* or *shrubs*, usually twining and milky, smooth, or with a simple pubescence; *leaves* alternate, undivided, or lobed, seldom pinnatifid, with no stipules; *inflorescence* axillary, or terminal, peduncles one, or many-flowered, the partial ones generally with two bracts.

ARGYREIA. (Endl. Gen. Pl. 654.)

ARGYREIA BRACTEATA. Madras.

Decoctions of the leaves are used by the natives as fomentations in cases of scrofulous enlargements of the joints, the boiled leaves being employed as a poultice at the same time; juice milky. (L. ex Wight.)

BATATUS. (Endl. Gen. Pl. 654.)

BATATUS PANICULATA. *Convolvulus paniculatus, Ipomea paniculata.* East Indies, New Holland, &c.

The large tuberous root is cathartic, and is used as such by the natives of the places where it grows. (L.)

BREWERIA. (Endl. Gen. Pl. 652.)

BREWERIA SCOPARIA. *Convolvulus scoparius.* Canary islands.

Wood, *rosewood*, hard, used by the fan-makers; shavings have the scent of roses. (G.) Wood perfumed, smelling strongly of roses, yellowish fawn colour, veined with red, burning readily when lighted; taste bitter, balsamic; yields by distillation an essential oil of bitter balsamic flavour, little used, except, according to Fée, for adulterating oil of roses. (*Lignum Rhodium Officin.*) (L.)

CALYSTEGIA. (Endl. Gen. Pl. 653.)

*CALYSTEGIA SEPIUM. (E. B. 313.) *Convolvolus sepium, Bindweed.*

Fl. large, pure white. July, August. Perennial. Moist woods and hedges.

Juice purgative. (G.) Root purgative like scammony, but much less active. (L.)

*CALYSTEGIA SOLDANELLA. (E. B. 314.) *Convolvulus soldanella, Brassica marina, Sea colewort, Scotch scurvy grass, Soldanella, Sea-side bind weed.*

Fl. rose-coloured. August. Perennial. Sandy banks on sea-shore.

Root purgative. (G.) Contains, according to Mr. Planche, twenty-four per cent. of a green purgative resin. (L.)

CONVOLVULUS. (Endl. Gen. Pl. 653.)

CONVOLVULUS ALTHÆOIDES. South of Europe.

Roots purgative, may be substituted for jalap. (G.) According to M. Loiseleur Deslongchamps, the roots contain a purgative resin, in doses from 15 to 24 grains. (L.)

*CONVOLVULUS ARVENSIS. (E. B. 312.) *Small bind weed.*

Fl. rose-coloured or whitish. June, July. Perennial. Cornfields and hedges.

Juice purgative.

CONVOLVULUS BATATAS. India.

Root, *Sweet potatoes, Spanish potatoes,* nutritive.

CONVOLVULUS CANTABRICA. *Cantabrica, Convolvulus minimus, Lavender bind weed.* South of Europe.

Herb vermifuge.

CONVOLVULUS CNEORUM. *Cneorum album, Dorycnium, Rock rose.* Levant.

Root purgative.

CONVOLVULUS EDULIS.

Root eaten.

CONVOLVULUS FLORIDUS. Canary Islands.

Root used as an errhine; wood, *rosewood,* of good quality. (G.)

CONVOLVULUS MACROCARPUS. South America.

CONVOLVULUS PAPIRIN.

Roots purgative.

CONVOLVULUS SCAMMONIA. *Aleppo scammony plant.* Hedges and bushy places in Greece and the Levant.

Roots yield by incision *Aleppo scammony.* (G.) The hard brittle ash-coloured resin, called *Scammony,* is obtained from the roots of this plant, which, however, according to Sibthorpe, is not the *Σκαμμωνια* of Dioscorides, which he refers to Convolvulus farinosus. The quality of the drug is so extremely uncertain, that the gatherers have been supposed to collect different species of convolvulus instead of the genuine one; but it appears from the reports of the Smyrna merchants, that this is not the case; the roots of young plants produce a less active juice than old ones, and the colour of the scammony is more or less intense, according as the plants grow in sunny or shady places; but the quality of the resin is not considered to be affected by this circumstance; the difference in samples proceeds principally from the manipulations of the Jews, and the greater or less care of the peasants in collecting the drug; it is certain that Sibthorpe was under a mistake, in referring the Aleppo scammony to C. farinosus, a Madeira species; Dioscorides describes scammony as having κλωνας εμφαινοντας τι δασύτητος, according to the usual reading, and this certainly does not agree with C. scammonia, and would apply better to the C. sagittifolius found in Samos, and other islands of the Archipelago, but we know nothing of this plant producing anything like scammony; it is more probable that the text of Dioscorides is corrupt, and that the reading in the Aldine edition of 1499, of παχύτητος for δασυτητος, is more genuine, in which case the description of the ancient author suits C. scammonia. (L.) Scammony, when pure, is a powerful and drastic purgative, as its evacuant powers depend upon its local irritation, it is inadmissible in inflammatory conditions of the alimentary canal, but is well adapted for torpid and inactive conditions of the abdominal organs. It is principally valuable as a smart cathartic for children, on account of the smallness of the dose requisite to produce the effect, the slight taste, and the energy yet safety of its operation. When used for them it is generally associated with calomel, rhubarb, or sulphate of potash; it is useful in all cases in which an active cathartic may be required. (Pereira.)

CUSCUTA. (Endl. Gen. Pl. 653.)

*CUSCUTA EPITHYMUM. (E. B. 55.) *Epithymum, Dodder of thyme, Lesser dodder.*

Fl. rose-coloured. August. Annual. Parasite on furze and other heath plants.

*CUSCUTA EUROPÆA. (E. B. 378.) *Greater dodder, Hell weed.*

Fl. rose-coloured, stem red. August, September. Annual. Parasite on nettles, flax, &c.

Juice purgative, deobstruent, externally used against the itch.

IPOMEA. (Lind. Nat. Syst. 231.)

IPOMEA BRAZILIENSIS. *Convolvolus braziliensis, Sea-side potato slip.*

Root in decoction purgative, yields scammony. (G.)

IPOMEA CATHARTICA. St. Domingo.

Roots furnish a resinous substance, used as a purgative in St. Domingo; its use is, however, not very safe, as it is apt to produce superpurgations. (L.)

IPOMEA MACRORHIZA. Georgia and Carolina.

Root purgative. (G.) Said to be the *Convolvolus Jalapa* of Linnæus, but possesses no purgative properties whatever; Dr. Baldwin administered eight drachms of the powdered root without effect, so that in fact it contains little or no resin, but like the Batatas consists chiefly of saccharine and farinaceous matter. (L.)

IPOMEA MECHOACANNA. Mexico.

Root, *Mechoacan*, *Mechoacanna alba*, less active than jalap, and less fatiguing. (G.) The slightly purgative *Mechoacan root* of Mexico is possibly produced by some species of this genus, but the Convolvolus mechoacannus of Willdenow, or the Ipomea mechoacanna of Nees and Ebermaier, is too little known to be described; Wood and Bache refer it to I. macrorhiza. (L.) Purgative properties comparatively trifling. (O'Sh.)

IPOMEA OPERCULATA.

Said by Guibourt to furnish part of the *Mechoacan* of commerce. (L.)

IPOMEA ORIZABENSIS. South America.

Lindly supposes this to be the Convolvolus orizabensis of Pellatan, as quoted by Dr. Pereira in Med. Gaz. xx. 932. Dr. Schiede had heard of it under its Spanish name of *Jalapa macho*, or *Purga macho*, or *Male jalap*, but he had only seen the root, which appears very like that of I. purga. (L.)

IPOMEA PANDURATA. *Convolvolus panduratus.* North America.

Root purgative. (G.) The powdered root acts like rhubarb; it requires to be given in larger doses than jalap; it has an American reputation as a remedy for calculous affections, and in cases of gravel. (L.)

IPOMEA PURGA. *I. jalapa.* South America.

From the statements of Dr. Schiede and others, confirmed by an unpublished letter in the possession of the Horticultural Society of London, from Don Juan de Orbegozo, a pupil of Cervantes residing at Orizaba, it appears certain that this plant furnishes the jalap of commerce; it is, however, equally certain, from the information furnished by the latter gentleman, that I. orizabensis is considered by the traders in jalap to be extremely similar in quality, and as it is the more abundant and larger of the two, at least in some districts, the probability is, that it also forms a part of the imported samples of this drug. (L.) Root, *Jalap*, *Jalapium*, *Jalapa*, *Mechoacanna nigra*, *Jalapæ radix*, a very active purgative in doses of ʒss. to ʒj. in powder; in hypochondriacal diseases and bilious temperaments it gripes violently, and seldom acts properly as a purge, unless combined with the potassæ bitartras and a little ginger; from South America. (G.) A most valuable purgative, dose 10 to 30 grs.; usually given with twice its weight of cream of tartar and a little ginger. (O'Sh.) A powerful and drastic purgative, when judiciously exhibited both safe and efficacious. (Pereira.)

East Indies.

IPOMEA QUAMOCLIT.

Root used as a sternutatory.

IPOMEA TUBEROSA. *Convolvulus tuberosus, Seven eared, or Spanish arbour vine.* Jamaica.

Root purgative. (G.) All the parts purgative; Dr. Barham thinks scammony might be obtained from it. (L.)

East Indies, &c.

IPOMEA TURPETHUM.

Root, *Turbith, Turbeth, Turpethum,* similar to jalap, rougher in its operation. (G.) The fresh bark of the root, rubbed up in milk, is used in India as a purgative; about six inches in length of a root, as thick as the little finger, is reckoned a dose. (L.) From experiments carefully conducted, O'Shaughnessy says he feels warranted in asserting that the action of this medicine is so extremely uncertain, that it does not deserve a place in our Pharmacopœia. (*Bengal Dispensatory.*)

PHARBITIS. (Endl. Gen. Pl. 654.)

PHARBITIS NIL. *Convolvulus nil, Ipomea cærulea.* East Indies.

Seeds sold in apothecaries shops of Calcutta, under the name of Kala dana, as a purgative; said to be an effectual quick cathartic. Seeds are roasted like coffee, powdered, and administered in doses of from 30 to 40 grains, in any convenient vehicle. (L. ex Roxburgh.) An exceedingly cheap remedy, perfectly equal to jalap as a cathartic, superior to it in portability and flavour. (O'Sh.)

ORDER 111. BORAGINEÆ. (De Cand. Bot. Gal. 331.) ASPERIFOLIÆ. (Endl. Gen. Pl. 644.)

Calyx gamosepalous, five-lobed, persistent; *corolla* generally regular, five cleft, the throat often closed with projecting appendages, imbricate in æstivation; *stamens* five, inserted into the corolla, and alternate with its segments; *ovary* 2—4 lobed, free, within an hypogynous disk; *style* simple, persistent, arising from between the lobes of the ovary; *stigma* entire or bilobed; *nuts* or *cariopsides* 2—4, one-celled, one-seeded, adnate to the style by the inner side; *seeds* separable from the pericarps; *albumen* none; *embryo* straight; *radicle* inferior; *cotyledons* foliaceous. *Herbaceous plants* or *shrubs*: *leaves* alternate, covered with asperities consisting of hairs proceeding from an indurated enlarged base; *flowers* in one-sided, gyrate spikes, or racemes, or panicles, sometimes solitary or axillary.

The plants of this order are refreshing. (G.) No plants of this order are of any real importance in medicine. (L.)

ANCHUSA. (De Cand. Bot. Gal. 334. Endl. Gen. Pl. 648.)

ANCHUSA ITALICA. *Bugloss.* Italy, Greece.

Of no real medicinal value, being simply emollient, mucilaginous, and perhaps slightly diuretic. (O'Sh.)

*ANCHUSA OFFICINALIS. (E. B. 662.) *Buglossum hortense, Common alkanet, Garden bugloss, Ox tongue.* (A doubtful native.)

Fl. deep purple. July. Perennial. Waste ground in Northumberland, &c.

Flowers cordial, the tops were formerly used in cool tankards; leaves refreshing, moistening, contain nitre. (G.) Roots mucilaginous, used in China for promoting the eruption of the small-pox. (Lou.)

ANCHUSA TINCTORIA. *Alkanet.* South of France.

Roots communicate a fine deep red to oils, wax, and all unctuous substances, as well as to spirits of wine; it is used chiefly by the apothecaries for colouring plaisters, lip-salves, &c., and by vintners for staining the corks of their port-wine bottles, or for colouring and flavouring the spurious compounds sold as port-wine. (Lou.) The alkanet of Constantinople is produced by a different order of plants altogether, being the root of *Alcanna vera.* (Nat. Ord. *Salicariæ.*) (O'Sh. ex Fée.)

ANCHUSA VIRGINICA.

Root used as alkanet.

ASPERUGO. (De Cand. Bot. Gal. 335. Endl. Gen. Pl. 650.)

*ASPERUGO PROCUMBENS. (E. B. 661.) *German madwort, Great goose-grass, Small wild borage.*

Fl. light blue. June, July. Annual. Waste places, Purfleet, Scotland.

Root sudorific, also used with oil as a dressing for wounds.

BORAGO. (De Cand. Bot. Gal. 334. Endl. Gen. Pl. 650.)

*BORAGO OFFICINALIS. (E. B. 36.) *Common borage.*

Fl. bright blue. June, July. Biennial. Among rubbish and near ruins.

Qualities the same as those of Anchusa officinalis. (G.) Pliny says that wine, with this infused in it, cheers the spirits; it was formerly in great repute as a cordial; according to Withering, the young leaves may be used as a salad or pot-herb. (Lou.) The whole plant has an odour approaching to cucumber and burnet, which gives a flavour to a cool tankard; but its supposed exhilarating qualities, which caused borage to be reckoned one of the four cordial flowers, along with alkanet, roses, and violets, may justly be doubted. (Smith.) It was once esteemed as a pectoral medicine, and a decoction of its leaves mixed with honey makes a good ptisan. (L.)

Cynoglossum. (De Cand. Bot. Gal. 336. Endl. Gen. Pl. 650.)

*Cyncolossum officinale. (E. B. 921.) *Cynoglossum, Common hound's-tongue.*

Fl. purplish red. June, August. Biennial. Shady places in the east and middle of England. Rare.

Roots astringent and sedative; used externally and internally in decoction in scrofula; the herb bruised drives away mice. (G.) Smells like mice; was considered antiscrofulous; is disliked by cattle. (Lou.) Once officinal, being used as an antispasmodic, but it is so fœtid that it has long since ceased to be exhibited; Smith says it is narcotic. (L.) Of no medicinal importance. (O'Sh.)

Echium. (De Cand. Bot. Gal. 332. Endl. Gen. Pl. 647.)

Echium italicum. *Onosma, Stone bugloss.* Jersey.

Leaves in wine facilitate delivery. (G.)

Echium rubrum. *True alkanet.* Hungary.

Bark of the root colours oily substances red, used in lipsalves; juice of the fresh roots used to redden the cheeks; colouring matter extracted by ether. (G.)

*Echium vulgare. (E. B 181.) *Echium, Viper's bugloss.*

Fl. blue. July. Biennial. On sandy and chalky soils.

Perhaps the handsomest of European flowers. (Lou.) Root opening and slightly astringent. (G.)

Heliotropium. (De Cand. Bot. Gal. 331. Endl. Gen. Pl. 646.)

Heliotropium europæum. *Turnsol.* South of Europe.

Softens warts and makes them fall off; taken internally, it opens the belly; flowers used as a blue colour, when altered by ammonia as a purple, and by acids as a red. (G.) It was called *Verrucaria* by the Latins, because the juice mixed with salt was said to be excellent in removing warts. (Lou.)

Heliotropium indicum. (O'Sh. Beng. Disp. p. 496.) *Indian turnsol.*

Plant slightly bitter, juice of the leaves applied to painful gumboils and to repel pimples on the face; also used in inflamed or excoriated tarsi. In Jamaica it is used with castor oil to relieve the pain of scorpion stings, and in the treatment of hydrophobia. (O'Sh.)

Heliotropium jamaicense. *Jamaica turnsol.* West Indies.

Plant in decoction diuretic.

HELIOTROPIUM SUPINUM. *H. minus, Small turnsol.* South of Europe.

Herb laxative, seeds emmenagogue.

LITHOSPERMUM. (De Cand. Bot. Gal. 332. Endl. Gen. Pl. 648.)

*LITHOSPERMUM ARVENSE. (E. B. 123.) *Corn gromwell, Bastard alkanet.*

Fl. white. May, June. Annual. Corn-fields. Common.

Bark abounds with a deep red dye, which stains paper, linen, &c., and is easily communicated to oily substances, like the alkanet root, and hence called *Bastard alkanet;* the country girls in the north of Sweden stain their faces with the root on days of festivity. (Lou.)

*LITHOSPERMUM OFFICINALE. (E. B. 134.) *Lithospermum, Milium solis, Grey millet, Gromwell.*

Fl. pale yellow. June. Perennial. Dry waste places.

Seeds being like a stone, were for that reason formerly used as a cure for that disease. (Lou.) Having no efficacy, are not at present employed.

LYCOPSIS. (De Cand. Bot. Gal. 834. Endl. Gen. Pl. 648.)

*LYCOPSIS ARVENSIS. (E. B. 930.) *Bugloss, Small wild bugloss.*

Fl. blue purple. June. Annual. Corn-fields and roadsides.

LYCOPSIS VESICULARIA. *Creeping bugloss.*

Pectoral plants.

MYOSOTIS. (De Cand. Bot. Gal. 335. Endl. Gen. Pl. 649.)

*MYOSOTIS ARVENSIS. (E. B. 2629.) *Myosotis scorpioides α, Field scorpion grass, Mouse-ear.*

Fl. blue. June, July. Annual. Cultivated grounds, and on banks.

*MYOSOTIS PALUSTRIS. (E. B. 1973.) *M. scorpioides β, Forget me not, Great water scorpion grass.*

Fl. bright blue. June, September. Perennial. Ditches and sides of rivers.

Pectoral.

ONOSMA. (De Cand. Bot. Gal. 334. Endl. Gen. Pl. 647.)

ONOSMA ECHIOIDES. *Small yellow alkanet.* South of Europe.

Root used as alkanet.

PULMONARIA. (De Cand. Bot. Gal. 333. Endl. Gen. Pl. 647.)

*PULMONARIA OFFICINALIS. (E. B. 118.) *P. maculosa, Cowslips of Jerusalem, Common lungwort, Sage of Jerusalem, Spotted comfrey, Spotted lungwort.*

Fl. purple. May. Perennial. Woods and thickets, Hampshire, &c. Not common.

Root sudorific, used with oil as a dressing for wounds. (G.) It must not be inferred from English names of this sort having been applied to plants, either that lungwort was ever used in this country for the lungs, or liverwort for the liver; the truth is, the old herbalists made English names after their Latin denominations, without inquiring whether such continued to be applicable or not, and their less informed successors had no difficulty in finding those virtues in the plants, which were indicated by the names of the translators. (Lou.)

SYMPHYTUM. (De Cand. Bot. Gal. 334. Endl. Gen. Pl. 649.)

SYMPHYTUM OFFICINALE. (E. B. 817.) *Consolida major, Symphytum, Comfrey, Great consoude.*

Fl. yellowish or purplish. June, July. Perennial. Banks of rivers and ditches.

Root astringent, glutinous; leaves used to flavour cakes; young shoots esculent. (G.) Formerly in much repute as a vulnerary, but now not employed. (L.) Abounds in mucilage, and may be employed for Althæa officinalis. (Lou.) The recent root is in popular use in France in cases of rupture and bruises. (O'Sh.)

TRICHODESMA. (Endl. Gen. Pl. 650.)

TRICHODESMA ZEYLANICA. *Borago zeylanica.* East Indies, &c.

Considered as diuretic; one of the cures for snake-bites in India. (L.)

ORDER 112. CORDIACEÆ. (R. Brown Prod. 492. Endl. Gen. Pl. 643.)

Calyx inferior, five-toothed; *corolla* monopetalous, with the limb in five divisions; *stamens* alternate with the segments of the corolla, out of which they arise; *anthers* versatile; *ovary* superior, four-celled, with one pendulous ovule in each cell; *style* continuous; *stigma* four-cleft, with recurved segments; *fruit* drupaceous, four-celled, part of the cells frequently abortive; *seed* pendulous from the apex of the cells by a long funiculus, upon which it is turned back; *embryo* inverted, with the cotyledons plaited longitudinally; *albumen* none. *Trees: leaves* alternate, scabrous, without stipules, of a hard, harsh texture; *flowers* panicled, with minute bracts.

CORDIA. (Endl. Gen. Pl. 643.)

CORDIA ANGUSTIFOLIA. (Roxb.) India.

Bark much used in India for making astringent gargles. (O'Sh.)

CORDIA GERASCANTHUS. West Indies.

Wood, *Jamaica rosewood,* fine scented, used by the cabinet-makers, and distilled for its oil.

CORDIA LATIFOLIA. (Roxb.) Hindostan.

Under the name of *Sebesten plums*, *Sebestans*, or *Sepistans*, two sorts of Indian fruit have been employed as pectoral medicines, for which their mucilaginous qualities, combined with some astringency, have recommended them; they are believed to have been the *Persea* of Dioscorides; according to Mr. Colebrooke, this is a larger and more mucilaginous sort than that described by European writers on materia medica, which is the produce of *C. myxa.* (L.)

CORDIA MYXA. *Sebestena officinalis.* India, Persia, Arabia, &c.

Fruit, *Sebestens myxa*, is esculent, laxative; birdlime is made from it; wood tough, solid, used for procuring fire by friction. (G.) The smell of the nut when cut is heavy, the taste of the kernels like that of fresh filberts; it is the true *Sebesten* of the European Materia Medica; the fruits, according to Roxburgh, are not used in the northern Circars of India for any medicinal purpose; when ripe, they are eaten by the natives, and also most greedily by several sorts of birds, being of a sweetish taste; the wood is soft, and of but little use except as fuel; it is reckoned one of the best kinds for kindling fire by friction, and is thought to have furnished the wood from which the Egyptians constructed their mummy cases; the bark is said by Dr. Royle to be accounted a mild tonic. (L.) Has a viscid, mucous juice, used for glue in the east; leaves, bruised with those of *Datura metel*, applied to the forehead in headache. (Lou.) Seeds deemed an infallible remedy in ringworm, the powder mixed with oil being applied to the eruption. (O'Sh.)

CORDIA SEBESTENA. West Indies.

Flowers very beautiful and ornamental; a small piece of the wood put on a pan of lighted coals will perfume the whole house; from the juice of the leaves, with that of a species of fig, is prepared the fine red colour with which they dye their clothes in Otaheite. (Lou.)

The dried fruits of this genus are very glutinous in the fresh state. They are slightly laxative, but it is especially as a pectoral that they are esteemed in India. In Java the fruit is used in gonorrhœa and ardor urinæ; twelve drachms of the pulp are said to be equal in aperient effect to the same quantity of cassia pulp. (O'Sh.)

ORDER 113. SOLANEÆ. (De Cand. Bot. Gal. 337.) SOLANACEÆ. (Endl. Gen. Pl. 662.)

Calyx gamosepalous, equal, generally persistent, five (rarely four) cleft or partite; *corolla* gamopetalous, generally regular, five (rarely four) cleft, deciduous, plicate in æstivation; *stamens* five, inserted into the base of the corolla, alternate with, and equal to, the number of its lobes; *ovary* free, simple; *style* one; *stigma* simple; *fruit* either a two-celled capsule, the dissepiments parallel to the valves, or a berry, the receptacle seminiferous and central; *seeds* numerous; *albumen* fleshy; *embryo* straight, or curved; *cotyledons* semiterete, elongated. *Herbs,* or rarely *shrubs,* with alternate, simple or lobed *leaves; flowers* often extra-axillary.

ATROPA. (De Cand. Bot. Gal. 338. Endl. Gen. Pl. 666.)

*ATROPA BELLADONNA. (E. B. 592.) *Belladonna, Solanum furiosum, S. lethale, S. maniacum, Dwale, Deadly nightshade.*

Fl. drooping, lurid purple. June. Perennial. Waste places, but not common.

Leaves, *Belladonnæ folia,* applied to the eye, paralyse the iris; are useful in cancer and scrofula, either applied as poultices or sprinkled over the sores; used also internally in doses of gr. j. to iij. in obstinate diseases, acting as a narcotic, diaphoretic, diuretic, and sialogogue; berries eaten in an overdose, that is, more than three or four, are poisonous; vinegar is the best antidote, as emetics, even tartar emetic, ℈ss., have in this case scarcely any action; juice of the berries cosmetic, rendering the cheeks pale. The narcotic properties of this substance depend on its containing the alkaloid *Atropa.* (G.) A dangerous narcotic; every part of the plant is poisonous, and children and the ignorant have often suffered from eating the berries, the beautiful appearance and sweet taste of which render them very alluring; the symptoms which they induce are those of intoxication, accompanied with fits of laughter and violent gestures, great thirst, difficulty of deglutition, nausea, dilatation of the pupil, with the eyelids drawn down, redness and tumefaction of the face, stupor or delirium, a low and feeble pulse, paralysis of the intestines, convulsions, and death. In medicine, belladonna is not only narcotic, but diaphoretic and diuretic; it is extensively employed, especially in producing dilatation of the pupil when its infusion is dropped into the eye; among other properties, it is said by Hahnemann and Koreff to protect the individual who takes it from the contagion of scarlatina. (L.) Belladonna has been employed with success as an anodyne in neuralgia, tic-douloureux, arthritic pains, painful ulcers, and glandular enlargements, also as an antispasmodic, resolvent, and discutient; in maladies of the eyes it is used to dilate the pupil, and has also been found beneficial in epilepsy, mania, hysteria, chorea, and other maladies of the centro-spinal system; as a defence against scarlatina, its efficacy is exceedingly doubtful. (Pereira.)

CAPSICUM. (De Cand. Bot. Gal. 337. Endl. Gen. Pl. 665.)

**CAPSICUM ANNUUM. *Capsicum, Chilly.*

Fl. whitish, small. July, August. Annual. Gardens. Native of South America.

Berries, *Spanish pepper, Pepper pods, Guinea pepper, Capsici baccæ, Capsicum, P. U. S.*, which are fleshless, are of a burning heat, irritating, attenuant, used as a sauce, or to give a false strength to vinegar, spirits, &c.; infused in vinegar, used as a gargle. (G.) The fruit and seeds are a powerful stimulant without any narcotic property; the well-known condiment called *Cayenne pepper*, consists principally of the ground seeds; it is employed in medicine, in combination with cinchona, in intermittents and lethargic affections, also in atonic gout, dyspepsia accompanied by flatulence, tympanitis, paralysis, &c.; its most valuable application appears, however, to be in cynanche maligna and scarlatina maligna, used either as a gargle, or administered internally. (L.)

CAPSICUM BACCATUM. *Bird pepper.* West Indies.

Has similar properties to the last, but is more acrimonious. (L.) Fruit gathered when ripe, dried in the sun, pounded and mixed with salt, is commonly known by the name of *Cayenne pepper;* a mixture of sliced cucumbers, shallots, or onions, cut very small, a little lime-juice and Madeira wine, with a few pods of bird pepper well mashed and mixed with the liquor, seldom fails to provoke the most languid appetite in the West Indies; it is there called *Mandram;* gathered fresh from the plant, the pods of all the species are liberally used, both in the East and West Indies, to assist digestion and correct flatulencies. (Lou.)

CAPSICUM FRUTESCENS. *Piper indicum, India berries, Bird pepper, Red pepper, Cayenne pepper, Guinea pods, Tschillies.*

Used for C. annuum. (G.) Is more acrimonious than C. annuum. (L.) This plant furnishes the Cayenne pepper of the shops; the ripe pods are dried in the sun, and then in an oven after bread is baked, in an earthen or stone pot with flour between the strata of pods; when quite dry, they are cleaned from the flour, and beaten or ground to fine powder. To every ounce of this a pound of wheat flour is added, and it is made into small cakes with leaven; these are baked, cut into small pieces, and baked again, that they may be as dry and hard as biscuit, and then are beaten into powder and sifted; it is then fit for use as a pepper, or for being packed up in a compressed state, and so as to exclude air, for exportation. (Lou.)

CAPSICUM GROSSUM. *Coffrée tschillie.* India.

Flesh of the berry pickled.

Cestrum. (Endl. Gen. Pl. 667.)

Cestrum auriculatum. South America,
Cestrum hediunda. South America.
Cestrum laurifolium. South America.
Febrifugal, used externally as astringents. (L. ex Martius.)

Cestrum macrophyllum. West Indies.
Cestrum nocturnum. East Indies.
Have properties similar to those of

Cestrum venenatum. Cape of Good Hope.
A decoction of the bark, reduced to the thickness of jelly, is used by the Hottentots to envenom their weapons; it is said to be a fatal poison, and to be also used by the same people to destroy wild beasts, by impregnating baits of flesh with its juice. (L.) The fruit of all the species is poisonous. (Loud.)

Crescentia. (Lindl. Med. Bot. 514. Endl. Gen. Pl. 723.)

Crescentia cujete. *Calabah tree.* West India islands.
Pulp used in diarrhœa, dropsy, headache, also internally in burns and in *coups de soleil;* expressed juice of the pulp ℥iiij. is purgative; a pectoral syrup is also made from it, which is sent over to Europe. (G.) From the pulp of the fruit a syrup is prepared in the West Indies, having a great reputation as a pectoral medicine, and as a remedy for internal bruises; Dr. Wright recommends the pulp as an excellent poultice for bruises and inflammation. (L.) The fruits, after the inside has been scooped out, are dried by the natives of the countries where they grow, and serve for containing water and other fluids. (Loud.)

Datura. (De Cand. Bot. Gal. 339. Endl. Gen. Pl. 663.)

Datura metel. *Metel.* India.
Seeds narcotic, more powerful than *D. stramonium;* produce temporary idiotcy; used for frauds. (G.)

*Datura stramonium. (E. B. 1288.) *Stramonium, Thorn apple.*
Fl. white. July. Annual. Waste places. Originally from America.
Herb a strong narcotic, even when mixed with tobacco and smoked; much used lately in asthma; externally the leaves, *Stramonii folia*, are anodyne, and used in headache and gout; seeds, *Stramonii semina*, may be given in powder to gr. x.; expressed juice, made into an ointment with hog's lard, used for irritable ulcers, burns, and scalds. (G.) A violent narcotic poison when taken internally, acting fatally if taken in large doses; in skilful hands it is a valuable remedy in mania, epilepsy, convulsions, tic douloureux, &c.; it palliates the distressing paroxysms of pure spasmodic asthma, when smoked,

for which purpose Bigelow recommends the leaves in preference to the root, in which it is obvious he must be right, as the plant is an annual; it is also employed successfully as an external application, as an anodyne and sedative in burns, hæmorrhoids, irritable ulcers, &c. (L.) The effects of the plants of this genus are similar to those of Atropa and Hyoscyamus; they are frequently employed by the Indian poisoners for the purpose of producing lethargy without killing, in order to facilitate theft and other criminal designs. (O'Sh.)

DATURA TATULA. North America, Portugal, South of France.

Very nearly the same as *D. stramonium*, and having similar properties.

HYOSCYAMUS. (De Cand. Bot. Gal. 329. Endl. Gen. Pl. 664.)

HYOSCYAMUS ALBUS. *Great white henbane.* South of Europe.

Milder than the black; seeds used in spitting of blood.

*HYOSCYAMUS NIGER. (E. B. 591.) *Hyoscyamus, Common henbane.*

Fl. dingy yellow, veined with purple lines. July. Biennial. Waste places.

Leaves, *Hyoscyami folia*, a very powerful narcotic in doses of gr. iij. to gr. x.; externally are anodyne or resolvent; seeds, *Hyoscyami semina*, narcotic, gr. iij. to gr. x., less uncertain than the leaves; their smoke, applied by a funnel, is used in toothache. (G.) A powerful narcotic; the capsules and seeds of which, smoked like tobacco, are a rustic remedy for toothache, but convulsions and temporary insanity are said to be sometimes the consequence of their use; used medicinally, the leaves produce effects very similar to those of opium; it is employed with advantage in painful and spasmodic affections, hysteria, rheumatism, and gout; also combined with colocynth in painters' colic and mania; it is also used externally to allay the irritation of very sensible parts; and the infusion dropped into the eye, dilates the pupil like Belladonna. (L.) Employed in this country as an anodyne, soporific, antispasmodic, and sedative, in cases where opium would disagree, and also to dilate the pupil, but is less powerful for this last purpose than *Belladonna;* it is also used in fomentations as a topical sedative and anodyne; the powder of the leaves is rarely employed, the extract and tincture being the preparations commonly used. (Pereira.)

MANDRAGORA. (Endl. Gen. Pl. 666.)

MANDRAGORA OFFICINALIS. *Atropa mandragora, Mandragora, Mandrake.*

Formerly supposed to be aphrodisiac, root gr. iij., narcotic, or it may be steeped in wine; leaves externally used as anodynes and resolvents, as also the powder of the root to indurated glands. (G.) A venomous plant, once an important engine in the days of medical charlatanry, from the roots being supposed to bear a resemblance to the human form; in old herbals, the figures display the male mandrake with a long beard, and the female with a long head of hair; on the continent the mandrake root is still sold to ensure boys or girls to pregnant women, procure happy births, &c.; in the seaport towns of France, mountebanks frequently expose them for sale. (Loud.)

Nicandra. (Endl. Gen. Pl. 665.)

Nicandra physalodes. *Atropa physalodes.* Peru. Diuretic. (L.)

Nicotiana. (De Cand. Bot. Gal. 239. Endl. Gen. Pl. 663.)

Nicotiana persica. (Lindl. Bot. Regis. t. 1592.) Persia. Produces the delicate and fragrant tobacco of Shiraz. (L.)

Nicotiana rustica. *N. minor, English tobacco.* South of Europe.

Leaves narcotic, sometimes sold as those of mandrake. (G.) Syrian and Turkish tobaccos are prepared from this species, which is much more mild in its operation than N. tabacum. (L.) The celebrated Shiraz tobacco is also the produce of this species. (O'Sh.)

Nicotiana tabacum. *Tabacum, Nicotiana, Petum, Tobacco.* West Indies.

Leaves, *Tabaci folia*, when green, detersive, acrid, narcotic, and apo-phlegmatizant; used externally in diseases of the skin, and as a dressing to verminous sores: and internally as an emetic, gr. iij. to gr. x., in water ℥iiij., and in dropsy and palsy; their smoke is used as a pleasant mode of losing time, and as a stimulating clyster in apoplexy, inveterate costiveness, and apparent death by drowning or hanging; in which last case, however, it is sometimes improper, as, if it does not immediately succeed, it exhausts the patient so much as to render other means ineffectual; imported from America and the West Indian islands. (G.) This species yields the *Virginian*, *Havannah*, and *Pigtail tobacco* of the shops, and probably the principal part of that which comes from India in the form of *Cheroots.* It is a powerful stimulant narcotic, employed medicinally as an errhine, in infusion as an expectorant and sedative, and in vapour both as an antispasmodic, and to bring on nausea and fainting; tobacco enemata have been found useful in relaxing the parts implicated in strangulated hernia, but the remedy is dangerous; when chewed it appears to act deleteriously, impairing the appetite, and bringing on torpor of the gastric nerves; although, if smoked in moderate quantities, it acts as a harmless excitant and sedative, yet it is a frequent cause of paralysis when the practice is indulged in to excess. *Oil of tobacco*, which is inhaled and swallowed in the process of smoking, is one of the most violent of known poisons; the Hottentots are said to kill snakes by putting a drop of it on their tongues, and the death of these reptiles is said to take place as instantaneously as if by an electric shock; dangerous symptoms are reported to have followed the application of the ointment to scald heads. (L.) In the case of a boy aged eight years, to whose head the expressed juice of tobacco was applied, for the cure of tinea capitis, death took place three hours and a half after the application. It has been employed in colic, ileus, strangulated hernia, constipation, ischuria, dysury, tetanus and other spasmodic disorders, dropsy, and also as a topical remedy in gout and rheumatic inflammation of the joints, testicles, and sclerotic coat of the eye, and in erysipelatous inflammation. (Pereira.)

PHYSALIS. (De Cand. Bot. Gal. 338. Endl. Gen. Pl. 665.)

PHYSALIS ALKEKENGI. *Alkekengi*, *Halicacabum*, *Winter cherry.* South of Europe.

Berries antinephritic, lithontriptic, and diuretic; if in gathering they are rubbed against the calyx, they acquire a nauseous taste, and become purgative. (G.) Diuretic, employed in veterinary practice. (L.) Berries acidulous and slightly bitter; they were esteemed detergent and aperient by the ancients; in Spain, Germany, and Switzerland, they are eaten as a common fruit. (Loud.)

PHYSALIS ANGULATA. *Jamaica winter cherry.* America.

Juice of the plant, with cayenne pepper, diuretic; cures the colic.

PHYSALIS SOMNIFERA. *Solanum somniferum*, *Sleepy nightshade.* South of Europe, East Indies.

Root hypnotic, milder than opium; fruit very diuretic; decoction of the herb used in toothache. (G.) This plant is thought to have been the Στρυχνος ύπνωτικος of Dioscorides; it is reputed to be narcotic, diuretic, and alexipharmic; the leaves, steeped in oil, are in India applied to inflammatory tumours, and they are used in a similar way in Egypt; Kunth recognised this plant in Egyptian mummies. (L.)

SOLANUM. (De Cand. Bot. Gal. 337. Endl. Gen. Pl. 665.)

SOLANUM BAHAMENSE. Bahama islands.

Its juice administered in the West Indies in cases of sore throat, in the form of a gargle. (G.)

SOLANUM CERNUUM. Brazil.

A decoction of the flowers and leaves is a powerful sudorific; and is very serviceable in syphilis, inveterate gonorrhœa, and similar complaints. (L.) Chili.

SOLANUM CRISPUM. *Natre.*

Shrub very bitter; berry in infusion used in inflammatory fevers.

*SOLANUM DULCAMARA. (E. B. 365.) *S. lignosum, Dulcamara, Bitter sweet, Woody nightshade.*

Fl. purple. June, July. Climbing shrub. Hedges and thickets.

Twigs, *Dulcamara caules*, diuretic, depurative, in chronic eruptions, its taste being covered with milk; the form in which it has been used is chiefly that of decoction, two or three ounces of that of the London Pharmacopœia may be given thrice a day. (G.) The root and young branches in the form of a decoction, much diluted with milk, have been recommended in scrofulous or glandular obstructions. (Smith.) The plant is a dangerous narcotic, and its gay tempting berries have occasionally caused serious accidents among children and others who have eaten them; in medicine the plant has been considered serviceable, both internally, and used as a wash in lepra, psoriasis, and other cutaneous disorders; it is diaphoretic, and is said to have been advantageously exhibited in asthma. (L.) Dulcamara has been thought serviceable in chronic pulmonary catarrhs, in rheumatic gouty complaints, in chronic skin diseases, in lepra, and in various cachectic conditions of the system, in which sarsaparilla has been found beneficial. (Pereira.)

SOLANUM INCANUM.

Leaves applied to cancers. East Indies.

SOLANUM JAQUINI.

Considered by the native practitioners as an expectorant. (L.)

SOLANUM LYCOPERSICON. *Love apple, Tomatoes.* South America.

Berries used to make a sauce. (G.) West Indies.

SOLANUM MAMMOSUM.

Said to be bitter, and a valuable diuretic.

SOLANUM MELONGENA. *Melongena, Egg plant.*

Leaves narcotic; berries, *Mala insana, Mad apples*, boiled and eaten in the warmer climates. (G.) Cultivated both in Europe and the East and West Indies for its fruit, which is used boiled; stewed in sauces, &c., like that of the *Love apple.* (Loud.) Peru.

SOLANUM MURICATUM.

Fruit eatable.

*SOLANUM NIGRUM. (E. B. 566.) *S. vulgare, Black nightshade, Common nightshade.*

Fl. white. June, September. Annual. Waste places.

Leaves used externally as an anodyne in erysipelas; young shoots, *Bredes, Laman,* eaten as spinach; berries produce mania, somnambulism, and death. (G.) A grain or two of the dried leaf have sometimes been given to promote various secretions, possibly by exciting a great and rather dangerous agitation in the viscera. (Smith.) It is a narcotic, and according to Orfila, its extract possesses nearly the same power as lettuce opium; in Brazil it is called *Carachicu,* or *Erva mora,* and when bruised is applied either in poultices or baths to painful wounds, and in generally inflammatory cases, with a predominant excitement of the nervous system. (L. ex Martius.)

SOLANUM OVIGERUM. *Oval egg plant.* Arabia.

Distinguished from the egg-like variety of S. melongena by its acrid pulp, which being removed by the scoop or pressure, the flesh is dressed and eaten. (L.) Said to be narcotic. (O'Sh.)

SOLANUM PANICULATUM. Brazil.

This plant is called *Juripeba* in Brazil, where the juice of its bruised leaves and unripe fruit is much esteemed as a powerful remedy in obstructions of the bowels, especially of the liver, and in catarrhus vesicæ; several other kinds of Solanum are used in similar diseases; when applied fresh they generally act very favourably in cleansing and healing wounds and ulcers. (L. ex Martius.)

SOLANUM PSEUDO CAPSICUM. *Amomum Plinii, Tree nightshade, Winter cherry.* Madeira.

Fruit anodyne.

**SOLANUM TUBEROSUM. *Potato.*

Fl. purple or white. June, September. Perennial. Native of America.

Tubers of the root, *Potatoes, Batatas,* appear to yield a vast quantity of food upon a small extent of ground and with little labour, but only one seventh part of the weight is nutritious, the remainder is an acrid poisonous juice. When it first began to be used, it was supposed to be narcotic, diuretic, and aphrodisiac. *Salep powder, or French salep,* consists of potatoes peeled, cut in slices, baked until brittle, horn-like, and breaking like glass, then ground to a whitish powder. (G.) There is no root hitherto discovered so well adapted for universal use as the tubers of the potato, for having no peculiarity of taste, and consisting chiefly of starch, their farina is nearly the same as that of grain; hence, with the flour of the potato, puddings, and such preparations as do not call the gluten of wheat flour into action, may be made equal to those of millet or rice, and excellent bread, with a moderate proportion of good wheat flour. Potato starch, independently of its use in the laundry, and as a hair powder, is considered an equally delicate food as sago or arrow root. As starch and sugar are so nearly the same that the former is easily converted into the latter, the potato yields a spirit equal to that of malt by distillation, and a wine or beer by the fermentative process. (Loud.) Many other species and varieties of this genus produce edible fruits or farinaceous tubers, and some of them saponaceous berries.

SOLANUM VESPERTILIO.

Berries deep lake-red, used to colour the cheeks. (G.) A spinose species of Solanum, called *Burabara*, is reported in Demerara to be an antidote to the bite of the rattle-snake. (L.)

ORDER 114.—SCROPHULARINEÆ. (Endl. Gen. Pl. 670. Lindl. Nat. Ord. 288.) ANTIRRHINEÆ. (De Cand. Bot. Gal. 342.)

Calyx free, five, or more generally (by abortion) four-parted; *sepals* more or less united, sometimes free, unequal, the upper one largest, the lateral ones smallest, imbricated in æstivation; *corolla* gamosepalous, five-cleft, or, (by the cohesion of the two upper petals to the apex,) four-cleft, the tube short or elongated, limb expanded or erect, subequally partite or bilabiate, imbricated in æstivation; *stamens* simple, opposite the sepals, the upper stamens entirely wanting or sterile, very rarely fertile, shorter than the others, the two lateral equal, rarely abortive, the two lower equal to, or longer than, the lateral ones, sometimes wanting; *anthers* two or one-celled, dehiscing longitudinally; *ovary* free, two-celled, cells two, or many-seeded; *style* simple, rarely slightly bifid; *stigma* generally simple, entire, emarginate, or bifid; *fruit* capsular, rarely baccate, two-celled, two-seeded, dehiscing by valves or pores; *dissepiment* parallel, or opposite to the valves, becoming loose in the centre, or altogether free; *placenta* adhering to the dissepiments, sometimes separating when ripe; *seeds* generally indefinite; *embryo* variously placed in the albumen. *Herbs, under-shrubs*, or sometimes *shrubs*, usually inodorous, but sometimes fœtid, rarely aromatic; *leaves* opposite, whorled, or alternate; *flowers* axillary or racemose, rarely spiked; *peduncles* opposite or alternate, sometimes simple and one-flowered, sometimes many-flowered, in dichotomous cymes.

In the second edition of the Bot. Gal. of De Cand. and Duby, this order is divided between the Antirrhineæ, p. 342, and Rhinanthaceæ, p. 351, but this is not generally followed. See Lind. Nat. Ord. 289.

ANTIRRHINUM. (De Cand. Bot. Gal. 343. Endl. Gen. Pl. 673.)

*ANTIRRHINUM MAJUS. (E. B. 129.) *Great snap dragon.* Fl. purplish-red. July, August. Perennial. Walls and chalk cliffs.

An hysteric, and used externally in ophthalmia.

*ANTIRRHINUM ORONTIUM. (E. B. 1155.) *Orontium arvense, Calves snout, Lesser snap dragon.*

Fl. purple. July, August. Perennial. Corn fields in the east and south of England.

Herb poisonous.

CALCEOLARIA. [Endl. Gen. Pl. 671.)

CALCEOLARIA PINNATA. Peru.

Leaves said to be purgative and emetic. (L.)

CALCEOLARIA TRIFIDA. *Tumpu.* Peru.

Leaves said to be tonic and febrifuge. (L.)

CAPRARIA. (Endl. Gen. Pl. 679.)

CAPRARIA BIFOLIA. Tropical America.

Flowers used instead of tea.

DICEROS. (Endl. Gen. Pl. 695.)

DICEROS COCHINCHINENSIS. Cochin China.

Eaten in salads.

DIGITALIS. (Endl. Gen. Pl. 678.) (De Cand. Bot. Gal. 342.)

*DIGITALIS PURPUREA. (E. B. 357.) *Digitalis, Fox-glove.*

Fl. purple, sometimes white. July, August. Biennial. Dry banks.

Leaves, *Digitalis folia*, used externally as vulnerary and antiscrofulous, and internally in doses of gr. ss. to gr. ij. as a sedative, and particularly as a diuretic, but great caution is required in using it, because it accumulates in the system; and the practitioner may be surprised at the sudden demise of his patient, even after he has left off its use; seeds, *digitalis semina*, used for the same purpose, less uncertain. (G.) The leaves and seeds of this plant, especially the former, in the state of powder, tincture, or infusion, afford one of the most valuable of known medicines for the purpose of reducing the action of the heart, promoting the action of the absorbents, as a diuretic, and for producing a specific action over the cerebro-spinal system; it is employed very extensively in fevers, dropsy, inflammation, hæmorrhages, diseases of the heart, and in mania, epilepsy, spasmodic asthma, and the like; it is very remarkable for its power on the system, sometimes accumulating, till it suddenly shows itself with irresistible force, to the imminent risk of the life of the patient. (L.) The leaves should be gathered when the plant is in flower, and those only which are fresh selected; the leaf stalks and mid-rib should be rejected, and the remaining part be dried either in the sunshine or on a tin pan or pewter dish before the fire, or the plant be hung up, each leaf separate, in a warm kitchen; practitioners ought always to obtain a supply of the recent leaves in the month of July, and dry them themselves, as in the herb shops they are often so ill dried as to appear black, in which state they are useless; the powder should be kept in closely stopped opaque phials. (Loud.) Both the dried leaves and powder should be preserved in well-stopped bottles, covered externally by dark-coloured paper, and kept in a dark cupboard; as keeping considerably diminishes their medicinal activity, they should be renewed annually. (Pereira.)

DIGITALIS LUTEA. *Yellow foxglove.* France.

May be used as the last.

EUPHRASIA. (De Cand. Bot. Gal. 354. Endl. Gen. Pl. 693.)

*EUPHRASIA OFFICINALIS. (E. B. 1416.) *Euphrazia, Eye-bright.*

Fl. white, streaked with purple. July, August. Annual. Pastures, common.

Cephalic, ophthalmic. (G.) Slightly bitter and aromatic; it has had much reputation in diseases of the eye, but has generally fallen into disrepute; it has, however, lately been asserted by Professor Kranichfeld, that it is particularly useful in catarrhal inflammation of the eyes; he has also found it beneficial in cough, hoarseness, earache, and headache, which have supervened in catarrhal affections. (L. ex. Med. Gaz. xx. 528.) Lightfoot states that the Scotch highlanders make an infusion of it in milk, and anoint the patient's eyes with a feather dipped in it. (Loud.)

GRATIOLA. (Endl. Gen. Pl. 682.)

GRATIOLA OFFICINALIS. *Gratiola, Hedge hyssop.* Marshes of Europe.

Very acrid, drastic, vermifuge, used also in dropsy and jaundice; dose gr. v. to ℈jss., beginning with a small one; inspissated juice, gr. xx. to xxx., is purgative and diuretic. (G.) A very active plant, formerly called *Gratia Dei*, on account of its efficiency as a medicine; it is extremely bitter, acts violently both as a purgative and an emetic, and has been said to be the basis of the famous gout medicine called *Eau medicinale*, which, as its active principle appears to be of the nature of Veratria, is not improbable; *Gratiola* is said to have been found serviceable in cases of hypochondriasis; in over doses it is a violent poison, and, according to Haller, it renders by its abundance some of the Swiss meadows useless as pastures. (L.)

G. PERUVIANA (Linn.) has purgative and emetic leaves and roots. (L.)

HEMIMERIS. (Endl. Gen. Pl. 672.)

HEMIMERIS CAULIALATA.

Stomachic, anodyne.

HERPESTES. (Endl. Gen. Pl. 681.)

HERPESTES MONNIERA. *Gratiola monniera, Monniera Brownii.* Tropical parts of the world.

The natives of India use the expressed juice mixed with petroleum, to rub on parts affected with rheumatic pains. (L.)

HERPESTES? AMARA. *Gratiola amara.* Moluccas.

Leaves excessively bitter, and might no doubt answer valuable purposes in medicine. (L. ex Roxb.)

LINARIA. (De Cand. Bot. Gal. 343. Endl. Gen. Pl. 673.)

*LINARIA CYMBALARIA. (E. B. 502.) *Antirrhinum cymbalaria, Cymbalaria, Ivy leaved toad flax.*

Fl. pale blue or purplish. May, September. Perennial. On old walls.

Has a warm cress-like flavour, and has been recommended as an antiscorbutic; Hamilton says that in India it is given with sugar in cure of diabetes, and from the report of its influence over that disorder, it well deserves to be tried by the English practitioner; it is, however, probable that Dr. Hamilton's remarks do not apply to this plant, which does not grow in India, but to *L. ramosissima*, (Wall.) a nearly allied species. (L.)

*LINARIA ELATINE. (E. B. 692.) *Antirrhinum elatine, Elatine, Veronica fœmina, Female speedwell, Fluellin, Sharp pointed fluellin,* or *Toad flax.*

Fl. yellow, upper lip violet. July, September. Annual, Corn fields on chalky or sandy soil.

Said to be bitter and purgative. (L.)

*LINARIA MINOR. (E. B. 2014.) *Antirrhinum minor, Lesser toad flax, Small toad flax.*

Fl. purplish-yellow. June, August. Annual. Chalky and sandy fields in the south of England.

These three are all anticancerous, especially *L. elatine*, the juice of which is used in foul ulcers and cutaneous eruptions. (G.)

*LINARIA VULGARIS. (E. B. 658.) *Antirrhinum linaria, Linaria, Toad flax, Yellow toad flax.*

Fl. yellow. July, August. Perennial. Hedges and borders of fields.

Deobstruent, diuretic. (G.) Reported to be purgative and diuretic; it is bitter; its flowers have been recommended, in decoction, as a wash for chronic diseases of the skin, and that it would not be an inactive lotion seems probable from the fact, that in London the plant is occasionally boiled in milk for the purpose of destroying flies. (L. ex Burnett.)

MELAMPYRUM. (De Cand. Bot. Gal. 351. Endl. Gen. Pl. 694.)

*MELAMPYRUM ARVENSE. (E. B. 53.) *Triticum vaccinum, Purple cow wheat.*

Fl. variegated with yellow, purple, rose-colour, and green. July. Annual. Corn fields and dry banks in Norfolk.

*MELAMPYRUM PRATENSE. (E. B. 113.) *Cratægonum, Common yellow cow wheat, Wild cow wheat.*

Fl. pale yellow. June, August. Annual. Groves and thickets.

Seeds aphrodisiac; herb fattens cows.

PEDICULARIS. (De Cand. Bot. Gal. 352. Endl. Gen. Pl. 694.)

*PEDICULARIS PALUSTRIS. (E. B. 399.) *Louse wort, Marsh louse wort, Red rattle.*

Fl. deep rose-colour. June, July. Annual. Wet and marshy places.

Nauseous, acrid; its juice, or a decoction, used externally in old ulcers; kills lice, yet said to breed lice in cattle that feed on it.

PICRORHIZA. (Endl. Gen. Pl. 689.)

PICRORHIZA KURROA. East Indies.

Root intensely bitter; used in the native medicine of India. (L.)

RHINANTHUS. (De Cand. Bot. Gal. 353. Endl. Gen. Pl. 694.)

RHINANTHUS CRISTA GALLI. (E. B. 657.) *Christa galli, Cock's comb, Common yellow rattle.*

Fl. yellow, tipped with purple. June. Annual. Meadows and pastures.

Is used to kill lice.

SCOPARIA. (Endl. Gen. Pl. 687.)

SCOPARIA DULCIS. Spanish America.

An infusion is used by the Indians of Spanish America to cure agues, according to Humboldt; Martius, however, states that in Brazil, where it is called *Basourinha*, or *Vacourinha*, the expressed juice is merely mucilaginous, and employed as a cooling laxative. (L.)

SCROPHULARIA. (De Cand. Bot. Gal. 346. Endl. Gen. Pl. 671.)

*SCROPHULARIA AQUATICA. (E. B. 854.) *Betonica aquatica, Water betony, Water figwort.*

Fl. dark purple at the mouth. July. Perennial. Wet places.

Properties the same as in *S. nodosa*; Burnett, however, says that they cannot be very unwholesome plants, because the garrison of Rochelle, during the celebrated siege by Cardinal

Richelieu in 1628, supported themselves in their extremity by eating the roots of S. aquatica, which has since that time been called by the French *Herbe du siége.* (L.)

*SCROPHULARIA NODOSA. (E. B. 1544.) *Knotted figwort.*

Fl. greenish-purple. July. Perennial. Moist ground and woods.

Leaves and roots said to be purgative and emetic; they have a bitter taste and a heavy disagreeable smell; a decoction of the leaves is used by farmers to cure the scab in swine. (L. ex Burnett.) Diuretic and narcotic. (Pereira.) Both of these are incisive, attenuating, used in scrophula and cancer. (G.)

TORENIA. (Endl. Gen. Pl. 684.)

TORENIA ASIATICA. East Indies.

Juice of the leaves considered on the Malabar coast a cure for gonorrhœa. (L.)

VANDELLIA. (Endl. Gen. Pl. 683.)

VANDELLIA DIFFUSA. Guayana, Brazil, Isle of France.

Of great value in Guayana as an antibilious emetic and febrifuge, and a most efficacious remedy in malignant fevers and dysentery, especially in cases depending on a disordered state of the liver. (Hancock in Med. Bot. Trans. 1829, p. 9.) It is called *Haimarada* by the Arowak Indians, and *Bitter blain* by the Dutch creoles. (L.)

VERBASCUM. (De Cand. Bot. Gal. (*Solaneæ*) 339. Endl. Gen. Pl. 670.)

*VERBASCUM BLATTARIA. (E. B. 393.) *Blattaria, Yellow moth mullein.*

Fl. July. Annual. Banks on a gravelly soil.

Has the same qualities as *V. thapsus;* attracts moths; seeds inebriate fish. (G.) Is said to have the power of driving away the blatta, or cockroach. (Loud.)

*VERBASCUM LYCHNITIS. (E. B. 58.) *V. album, White flowered mullein, White mullein.*

Fl. cream-coloured. July, August. Biennial. Road sides and pastures, especially on the chalk.

Leaves pulmonary. (G.) Used in many places as a poison for mice. (L.)

*VERBASCUM NIGRUM. (E. B. 59.) *Black mullein, Dark mullein.*

Fl. yellow. July, August. Perennial. Banks and way sides.

Root astringent; leaves and flowers anodyne and pectoral. (G.) Accounted slightly narcotic; the seeds of this, and of the next species, are said to be used by poachers to poison fish. (L.)

*VERBASCUM THAPSUS. (E. B. 549.) *Verbascum, Tapsus barbatus, Cow's lung wort, Great mullein, High taper.*

Fl. yellow. July, August. Biennial. Banks and waste ground on a sandy or chalky soil.

Anodyne and pectoral; the down has been used as moxa for the actual cautery: a decoction of the leaves given in diarrhœa. (G.) The down of several species of Verbascum may be used as tinder, and to make wicks for lamps, whence the name Lychnitis applied to one of the species, from λυχνος, a lamp. (Loud.) Used to poison fish. (O'Sh.) Emollient, demulcent, and supposed to be feebly narcotic. (Pereira.)

VERONICA. (De Cand. Bot. Gal. 335. Endl. Gen. Pl. 688.)

*VERONICA ARVENSIS. (E. B. 734.) *Speedwell chickweed, Wall speedwell.*

Fl. blue. May, July. Annual. Fields and walls; common.

Vulnerary, incisive, diaphoretic, antiphthisic.

*VERONICA BECCABUNGA. (E. B. 635.) *Anagallis aquatica, Beccabunga, Brooklime.*

Fl. blue. May, September. Perennial. Water-courses; common.

Leaves, when fresh, diuretic, antiscorbutic; eaten as salad; juice in a full dose an easy purge. (G.)

*VERONICA CHAMÆDRYS. (E. B. 623.) *Chamædrys sylvestris, Germander Speedwell, Wild germander.*

Fl. blue. May, June. Perennial. Woods, pastures, and hedge banks.

Leaves a better substitute for tea than those of *V. officinalis.*

*VERONICA MONTANA. (E. B. 766.) *Mountain madwort, Mountain speedwell.*

Fl. blue. May, June. Perennial. Moist woods.

Properties the same as those of *V. arvensis.*

*VERONICA OFFICINALIS. (E. B. 765.) *Betonica Pauli, Veronica mas, Common speedwell, Fluellin.*

Fl. blue. May, July. Perennial. Woods and dry pastures.

Leaves slightly astringent, bitter; substituted for tea, but more astringent and less grateful.

*VERONICA SPICATA. (E. B. 2.) *Smallest fluellin, Spiked speedwell.*

Fl. blue. July, August. Perennial. Newmarket, Bury, Lancashire, and Wales. Rare.

Properties similar to those of *V. arvensis.*

VERONICA VIRGINICA. *Virginia speedwell.* Virginia.

Root, *Veronica P. U. S.*, astringent.

ORDER 115.—OROBANCHEÆ. (De Cand. Bot. Gal. 348. Endl. Gen. Pl. 725.)

Calyx divided, persistent, inferior; *corolla* monopetalous, hypogynous, irregular, persistent, with an imbricated æstivation; *stamens* four, generally didynamous, inserted into the tube of the corolla, and alternate with its segments; *anthers* two-celled, cells distinct, parallel, often mucronate, or bearded at the base; *ovary* superior, one-celled, seated in a fleshy disk, with two or four parietal polyspermous placentæ; *style* one; *stigma* two-lobed; *fruit* capsular, enclosed within the withered corolla, one-celled, two-valved, each valve bearing one or two placentæ in the middle; *seeds* indefinite, very minute; *embryo* minute, inverted at the apex of a fleshy albumen. Herbaceous leafless *plants*, growing parasitically upon the roots of other species; *stems* covered with brown or colourless scales.

EPIPHEGUS. (Endl. Gen. Pl. 726.)

EPIPHEGUS VIRGINIANA. *Orobanche virginiana.* South of United States.

Michaux says that in Virginia the powdered stems are frequently sprinkled over inveterate ulcers and open cancers with considerable benefit; a quack medicine known in North America by the name of *Martin's Cancer Powder*, is said to be a compound of this plant and white arsenic. (L)

LATHRÆA. (De Cand. Bot. Gal. 351. Endl. Gen. Pl. 727.)

*LATHRÆA SQUAMARIA. (E. B. 50.) *Squamaria, Tooth wort.*

Fl. purplish. April, May. Perennial. On the roots of trees.

Herb consolidating, astringent, used in hernia and wounds.

OROBANCHE. (De Cand. Bot. Gal. 348. Endl. Gen. Pl. 727.)

*OROBANCHE MAJOR. (E. B. 421.) *Orobanche, Broom rape.*

Flower and whole plant dingy purplish-brown. June, July. Perennial. On roots of broom and furze.

Herb in powder gives relief in the colic; used in hypochondriasis; externally resolvent.

ORDER 116.—GESNERACEÆ. (Endl. Gen. Pl. 715. Lindl. Nat. Ord. 286.)

Calyx half superior, five-parted, with a valvate æstivation; *corolla* monopetalous, tubular, more or less irregular, five-lobed, with an imbricate æstivation; *stamens* two, or didynamous; *anthers* cohering, two-celled, innate, with a thick tumid connective, the rudiment of a fifth stamen is present; *ovary* half superior, one-celled, with two fleshy, two lobed, parietal, polyspermous placentæ, surrounded at its base by glands alternating with stamens; *style* continuous with the ovary; *stigma* capitate, concave; *fruit* capsular or succulent, half superior, one-celled, two-valved, with loculicidal dehiscence, and two opposite lateral placentæ, each consisting of two plates; *seeds* very numerous, minute; *embryo* erect, in the axis of fleshy albumen; *testa* thin, with very close fine oblique veins. Herbaceous *plants* or *under-shrubs; leaves* opposite, rugose, without stipules; *flowers* owy, in racemes or panicles, rarely solitary. (Lindl.)

BESLERIA. (Endl. Gen. Pl. 720.)

BESLERIA VIOLACEA. Tropical America.

Berry eatable.

PICRIA. (Endl. Gen. Pl. 719.)

PICRIA FELTERRÆ. China.

Intensely bitter.

ORDER 117. LABIATÆ. (De Cand. Bot. Gal. 359. Endl. Gen. Pl. 607.)

Calyx inferior, persistent, gamosepalous, generally regular, either five-dentate, with the fifth tooth superior and next the axis, or ten-dentate, sometimes irregular, oblique, incurved; *corolla* gamopetalous, hypogynous, deciduous, irregular, the tube polymorphous, the limb 4—5 lobed, subaumpanulate, bisubiate, or oblique, imbricated in æstivation; *stamens* four, generally didynamous, inserted into the tube of the corolla, and mostly fertile, the two upper sometimes sessile, generally fertile; *normal anthers* two-celled, the cells united by a connective, parallel, or diverging, or divaricate at the base, being continuous at the apex, sometimes one cell is abortive, the anther being then dimidiate; connective sometimes elongated, separating the anther cells to some distance; often imperceptible, the cells being then confluent; *ovary* four-lobed, the lobes one-ovuled, ovule erect; *style* one, inserted between the lobes at their base, bifid; *stigmas* two, terminal, or sub-terminal, generally extremely small; *fruit* generally consisting of four achenes, (or fewer by abortion,) persistent in the bottom of the calyx, the pericarp membranous, thickened, or fleshy; *seeds* erect; *albumen* none; *embryo* erect, deeply cleft; *cotyledons* straight, or recurved at the apex; *radicle* straight, or slightly curved. *Herbaceous plants* or *under shrubs: stem* four-cornered, with opposite ramifications; *leaves* opposite, divided, or undivided, exstipulate, replete with receptacles of aromatic oil; *flowers* in opposite, nearly sessile, axillary cymes, resembling whorls; sometimes solitary, as if capitate.

AJUGA. (De Cand. Bot. Gal. 361. Endl. Gen. Pl. 632.)

***AJUGA CHAMÆPITYS.** (E. B. 77.) *Chamæpitys*, *Iva arthritica*, *Teucrium chamæpitys*, *Ground pine*, *Yellow bugle*.

Fl. yellow. May, June. Annual. Chalky or gravelly fields.

Bitter, tonic, febrifuge.

***AJUGA PYRAMIDALIS.** (E. B. 1270.) *Mountain bugle*, *Pyramidal bugle*.

Fl. blue. June. Perennial. Highland pastures.

***AJUGA REPTANS.** (E. B. 489.) *Bugula*, *Common bugle*.

Fl. blue, sometimes white. May, June. Perennial. Moist pastures and woods.

Bitter, astringent, nearly inodorous, sometimes substituted for bark.

AMARACUS. (Endl. Gen. Pl. 617.)

AMARACUS DICTAMNUS. *Dictamnus Creticus*, *Origanum dictamnus*, *Dittany of Crete*. Rocks of Candia.

Aromatic and tonic; once in much repute among the Greeks and Romans, but now not much used. (L.)

ANISOMELES. (Endl. Gen. Pl. 625.)

ANISOMELES MALABARICA. *Ajuga fruticosa, Nepeta Malabarica.* East Indies and Isle of France.

Patients suffering from ague are made to inhale the vapour arising from an infusion of this plant, copious perspiration ensues, which is kept up for some time by drinking more of the infusion. (Wight.) The leaves, which are bitter and astringent, are taken in India to assist digestion, and to impart tone to the stomach. (L.) The entire plant deemed emmenagogue in the West Indies. (O'Sh.)

BALLOTA. (De Cand. Bot. Gal. 365. Endl. Gen. Pl. 627.)

*BALLOTA NIGRA. (E. B. 46.) *Marrubium nigrum, Black horehound.*

Fl. purple. July, August. Perennial. Waste places. Common.

BALLOTA SUAVEOLENS. *Jamaica spikenard.*

Strong-scented, emmenagogue, antihysteric, antiepileptic, expectorant, and vermifuge; externally they are vulnerary; an infusion of the latter used in dropsy and gravel. (G.)

COLLINSONIA. (Endl. Gen. Pl. 618.)

COLLINSONIA CANADENSIS. *C. præcox? Canadian snakeroot.* North America.

Root used for Virginian snakeroot.

CUNILA. (Endl. Gen. Pl. 618.)

CUNILA MARIANA. *Zizophora mariana, Virginia pennyroyal.* North America.

Leaves, *Cunila P. U. S.*, diaphoretic, distilled for their oil. (G.) Employed beneficially in slight fevers and colds, with a view to excite perspiration. (L.)

DRACOCEPHALUM. (Endl. Gen. Pl. 623.)

DRACOCEPHALUM MOLDAVICA. *Moldavian mint.* Moldavia.

Similar in quality to mint.

DYSOPHYLLA. (Endl. Gen. Pl. 612.)

DYSOPHYLLA AURICULARIA. *Mentha villosa, Auricularia, Ceylonian plant, Earwort, Marlow.* East Indies.

Used for deafness. (G.) Has been recommended as a stimulating application in the cure of deafness. (L.)

GALEOPSIS. (Endl. Gen. Pl. 625.)

*GALEOPSIS LADANUM. (E. B. 884.) *Narrow-leaf all-heal, Red hemp nettle.*

Fl. purplish, rose-coloured, or white. August. Annual. Corn-fields.

*GALEOPSIS OCHROLEUCA. (E. B. 2353.) *Trailing hemp nettle.*

Fl. large, pale yellow. July, August. Annual. Sandy corn-fields.

Well spoken of as an expectorant, and in phthisical complaints.

*GALEOPSIS TETRAHIT. (E. B. 207 and 667.) *Bastard hemp, Common hemp nettle.*

Fl. purplish or white. August. Annual. Corn-fields and waste places.

Seeds yield oil. (G.) These have also the same properties as Ballota nigra.

GENIOSPORUM. (Endl. Gen. Pl. 608.)

GENIOSPORUM PROSTRATUM. East Indies.

Used at Pondicherry as a febrifuge. (L.)

HEDEOMA. (Endl. Gen. Pl. 618.)

HEDEOMA PULEGIOIDES. *Cunila pulegioides, Melissa p., Zizophora pulegioides.* North America.

This plant has great reputation in North America as an emmenagogue, where it is called pennyroyal. (L.)

HYSSOPUS. (Endl. Gen. Pl. 617. De Cand. Bot. Gal. 363.)

**HYSSOPUS OFFICINALIS. *Hyssopus, H. angustifolius. H. orientalis, Hyssop.*

Fl. purple. July, August. Perennial. Native of the south of Europe and centre of Asia.

Leaves emmenagogue, pectoral, used as tea; soaked in water or wine, and applied as a cataplasm, used as a discutient for black eyes and other contusions. (G.) A stimulating stomachic, considered serviceable in hysterical complaints and in relieving flatulence. (L.)

LAMIUM. (Endl. Gen. Pl. 624. De Cand. Bot. Gal. 366.)

*LAMIUM VULGATUM. *Common dead nettle.*

Var. β. ALBUM. (E. B. 768.) *Urtica mortua, White archangel.*

Fl. white. June, July. Perennial. Ditches and waste places.

*LAMIUM PURPUREUM. (E. B. 1933.) *Red archangel, Red dead nettle.*

Fl. purple. May, September. Annual. Waste ground.

LAMIUM ORVALA. *Purple archangel.* Italy.

Heating and strengthening, made into tea with honey they are diaphoretic, discutient, and expectorant. (G.) Leaves of L. orvala eaten in Sweden as a pot-herb in spring according to Linnæus. (Loud.)

*LAMIUM GALEOBDOLON. (E. B. 787.) *Galeobdolon luteum, Galeopsis galeobdolon, Lamium luteum, Yellow archangel,* or *Weasel snout.*

Fl. yellow. May, June. Perennial. Woods and shady places.

Properties the same as Ballota nigra.

LAMIUM MACULATUM. *Milzadella, Urtica lactea, Spotted archangel.* Italy.

Herb esteemed specific in scrofula and fluor albus.

LAVANDULA. (De Cand. Bot. Gal. 369. Endl. Gen. Pl. 611.)

LAVANDULA SPICA. *L. latifolia, Spica vulgaris, Spike lavender, French lavender.* South of Europe.

Not employed medicinally, but yields what is called *Oil of spike,* which is used by painters on porcelain, and in the preparation of varnishes for artists. (L.)

LAVANDULA STŒCHAS. *Stœchas arabica, French lavender.* South of Europe, Asia, and Africa.

Has long been employed medicinally by the Arabs, who consider it as a valuable expectorant and antispasmodic. (L.) Also diuretic. (G.)

**LAVANDULA VERA. *L. angustifolia, L. officinalis, L. spica,* (Linn.), *Common lavender.*

Fl. purplish grey. July. Small shrub. Native of the south of Europe.

Flowering tops, *Lavandulæ flores,* very odoriferous, yield essential oil; are nervine, antispasmodic, and cephalic. (G.) The spikes of flowers contain a fragrant volatile oil in great abundance, together with a bitter principle; they are carminative, stimulant, and tonic, but are more employed in perfumery than in medicine; leaves and flowers have been used as sternutatories; *Oil of lavender* is obtained by distillation, and is sometimes given in hysteria and nervous headache; *Spirit of lavender* is prepared by distilling lavender flowers with rectified spirit, a sufficient quantity of water being added to prevent empyreuma; lavender enters into the composition of *Eau de Cologne* and the *Vinaigre aux quatre voleurs.* (L.)

LEONOTIS. (R. Br.) (Lind. Nat. Ord. 277.)

LEONOTIS NEPETIFOLIA. *Phlomis nepetifolia.* East Indies, South America.

Called *Cordâo de frade* in Brazil; used in that country in baths as a remedy in rheumatic complaints. (L.)

LEONURUS. (De Cand. Bot. Gal. 364. Endl. Gen. Pl. 625.)

*LEONURUS CARDIACA. (E. B. 286.) *Cardiaca, Mother wort.*

Fl. white, with a reddish tinge. August. Perennial. Hedges and waste places.

A stimulant, which has been much extolled by the Russians as a preservative against canine madness. (Burnett.) The reputed tonic powers of this herb, and its use in palpitations of the heart, or in that disease of the stomach called heartburn, are now little regarded. (L. ex Smith.)

LEONURUS MARRUBIASTRUM. *Bastard horehound.* Austria.

Properties of this and of the former like those of *Ballota nigra.* (G.)

LYCOPUS. (De Cand. Bot. Gal. 359. Endl. Gen. Pl. 613.)

*LYCOPUS EUROPÆUS. (E. B. 1105.) *Marrubium aquaticum, Water horehound, Gipsy wort.*

Fl. whitish, with purple dots. June, July. Perennial. Ditches and banks of rivers.

Qualities same as *Ballota nigra.*

MARRUBIUM. (De Cand. Bot. Gal. 364. Endl. Gen. Pl. 627.)

MARRUBIUM ALYSSUM. *Alyssum Galeni, Galen's madwort.* Spain.

MARRUBIUM PSEUDO-DICTAMNUS. *Bastard dittany.* Candia.

Properties the same as those of *Ballota nigra.*

*MARRUBIUM VULGARE. (E. B. 410.) *M. album, Marrubium, Prassium, Horehound, White horehound.*

Fl. white. August. Perennial. Waste places, especially on a chalky soil.

Pectoral, used in coughs and colds. (G.) The whole herb has a white or hoary aspect, and a very bitter, not unpleasantly aromatic, flavour; its extract is a popular remedy for coughs and asthmatic complaints. (Smith.) It has been recommended in chlorosis and hysteria as stimulating and tonic, and also in the treatment of intermittents; an infusion of the leaves has been found serviceable in chronic catarrh and humoral asthma; made into syrup or confection, and candied with sugar, they form a popular remedy for slight coughs; the plant, although not much used professionally, appears to deserve more attention than it now receives. (L. ex Burnett.) In large doses laxative. (Pereira.)

MELISSA. (De Cand. Bot. Gal. 374. Endl. Gen. Pl. 619.)

*MELISSA ACINOS. (E. B. 411.) *Acynos vulgaris, Thymus acynos, Basil thyme, Polymountain, Wild basil.*

Fl. bluish purple. August. Annual. Cultivated fields on chalky or gravelly soils.

Properties similar to those of *Lamium album.*

*MELISSA CALAMINTHA. (E. B. 1676.) *Calamintha vulgaris, C. montana, Common calamint.*

Fl. whitish or pale purple. July, August. Perennial. Borders of fields and waysides on chalky or gravelly soils.

**MELISSA CLINOPODIUM. (E. B. 1401.) *Clinopodium vulgare, Ocymum sylvestre, Wild basil.*

Fl. rose purple. August. Perennial. Hills and dry bushy places.

Heating and strengthening; a tea, made of this plant mixed with honey, is diaphoretic, discussive, and expectorant.

MELISSA GRANDIFLORA. *Calamintha grandiflora, C. magniflora, Mountain calamint.* Italy.

*MELISSA NEPETA. (E. B. 284.) *Calamintha nepeta, C. odore pulegii, Thymus nepeta, Lesser calamint.*

Fl. whitish, or pale purple. August. Perennial. Dry banks, on chalky soil.

**MELISSA OFFICINALIS. *Common balm, Melissa.*

Fl. whitish or cream-coloured. June, September. Perennial. Native of south of Europe.

Cephalic, used in nervous and hysteric cases. (G.) *M. calaminta* and *M. officinalis* are aromatic and slightly bitter, and are used by country people in the form of tea as a grateful fever drink. (L.) These plants are stomachic and diuretic, and were formerly prized as corroborants in hypochondriacal and nervous affections, but are now used only in the form of tea. (Lou.) Balm tea is sometimes employed as a diaphoretic in fevers, as an exhilarating drink in hypochondriasis, and as an emmenagogue in amenorrhœa and chlorosis. (Pereira.)

MELITTIS. (Endl. Gen. Pl. 623.)

*MELITTIS MELISSOPHYLLUM. (E. B. 636.) *Melissa fuchsii, Bastard balm.*

Fl. white or reddish, lower lip often spotted with purple. May, June. Perennial. Woods and coppices in the south of England.

Diuretic, opening.

MERIANDRA. (Endl. Gen. Pl. 613.)

MERIANDRA BENGHALENSIS. *Salvia benghalensis.* Bengal.

Leaves similar in smell and taste to those of *Salvia officinalis*, but much stronger; they are applied to the same uses. (L.)

MENTHA. (De Cand. Bot. Gal. 371. Endl. Gen. Pl. 613.)

*MENTHA AQUATICA. (E. B. 447.) *M. hirsuta, Sisymbrium sylvestre, Hairy mint, Water mint.*

Fl. purple. August, September. Perennial. Banks of rivers and marshes.

*MENTHA ARVENSIS. *Calamintha aquatica, Corn mint, Water calamint.*

Fl. pale purple. August. Perennial. Corn-fields. Common.

MENTHA CERVINA. *Pulegium cervinum, Hart's pennyroyal.*

*MENTHA CITRATA. (E. B. 1025.) *Bergamot mint.*

Fl. purplish. August, September. Perennial. Watery places. Rare.

Furnishes a fragrant oil, having very much the odour of bergamot. (L.)

MENTHA CRISPA. Var. *M. Aquatica.* *Curled leaved mint.*

MENTHA GENTILIS. Var. *M. arvensis.* *Bushy red mint.*

*MENTHA PIPERITA. (E. B. 687.) *M. glabrata, M. piperis-sapore, Pepper mint.*

Fl. purplish. August, September. Perennial. Watery places.

An aromatic stimulant, and the most pleasant of all the mints; employed in medicine for several purposes, principally to expel flatus, to cover the unpleasant taste of other medicines, and to relieve nausea and griping pains of the alimentary canal; the volatile oil is sometimes taken as an antispasmodic, it is what gives their flavour to peppermint lozenges. (L. ex Pereira.) Useful in the early stage of the malignant cholera. (O'Sh.)

*MENTHA PULEGIUM. (E. B. 1026.) *Pulegium, P. vulgare, Pennyroyal.*

Fl. purplish. June, September. Perennial. Wet commons.

The properties of this are analogous to those of other mints; the public fancy it to be possessed of specific emmenagogue, and antispasmodic qualities, an opinion formerly entertained of it by some medical practitioners; it is principally employed in obstructed menstruation, hysterical complaints, and hooping-cough. (L. ex Pereira.)

*MENTHA ROTUNDIFOLIA. (E. B. 446.) *Round-leaved horse-mint.*

Fl. whitish. August, September. Perennial. Moist places on waste ground.

*MENTHA SYLVESTRIS. (E. B. 686.) *Menthastrum, Horse mint.*

Fl. purplish. August, September. Perennial. Moist waste ground.

All stomachic, promoting digestion, diuretic, and approved emmenagogues, either in powder or infusion; all yield oil by distillation. (G.)

*MENTHA VIRIDIS. (E. B. 2424.) *Spear mint.*

Fl. purplish. August. Perennial. Marshy places.

The herb has a strong, peculiar, and pleasant odour, with an aromatic bitter taste, followed by a sense of coldness when air is drawn into the mouth; it is aromatic and carminative, and employed in flatulence, and to relieve the pain of colic;

various preparations are ordered by Pharmacopœias, of which *Oil of spearmint* and *Spearmint-water* are the most common; the former is taken in doses of from two to five drops rubbed with sugar in a little water. (L.)

MONARDA. (Endl. Gen. Pl. 615.)

MONARDA FISTULOSA. North America.

Decidedly bitter as well as aromatic; has been employed in the United States as a febrifuge. (L.)

MONARDA KALMIANA. *Oswego tea.* North America.

Leaves used as those of tea.

MONARDA PUNCTATA. North America.

Root, *Monarda P. U. S.*, emmenagogue. (G.) Abounds with camphor, and has been employed as an antispasmodic to relieve the nausea which attends the bilious fevers of America. (L.)

NEPETA. (De Cand. Bot. Gal. 369. Endl. Gen. Pl. 622.)

*NEPETA CATARIA. (E. B. 137.) *Mentha cataria, Nepeta, Cat mint.*

Fl. white, tinged and spotted with pink. July, August. Perennial. Hedges and waste places.

Highly alluring to cats. Other properties like those of *Lamium album.* (G.) This plant, when bruised, appears to act as a real aphrodisiac upon cats. Its stimulating properties deserve to be examined. It is said to have been advantageously exhibited in amenorrhœa. (L.)

*NEPETA GLECHOMA. (E. B. 853.) *Glechoma hederacea, Hedera terrestris, Chamæcissus, Ground ivy.*

Fl. blue. May. Perennial. Hedges and waste places

A favourite herb with country people for making a tea against pectoral and other complaints; it is said to have been serviceable in hypochondriacal complaints and monomania. (L. ex Burnett.) General properties same as the last. (G.) Before the use of hops the leaves were put into ale, and being bitter, aromatic, and having a peculiar and very strong smell, were much used in popular medicine. (Lou.)

OCYMUM. (De Cand. Bot. Gal. 375. Endl. Gen. Pl. 608.)

OCYMUM ALBUM. *Toolsie tea.* India.

Leaves used as tea. (G.) Juice given to children in colds, to the extent of a tea-spoonful twice daily; dried leaves used as a substitute for tea. (O'Sh.)

**OCYMUM BASILICUM. *Basilicum, Sweet basil.*

Fl. light purple. June. Annual. Native of India.

Strong scented, emmenagogue, gave the peculiar flavour to the original Fetter-lane sausages. (G.) According to Ainslie, used in India to assuage the pains of child-birth, the pilose variety is employed. (L.)

OCYMUM CAVUM. South America.

Esteemed a sudorific in Brazil. The small seeds are deemed cooling and mucilaginous, and consequently are given in gonorrhœa, ardor urinæ, and affections of the kidneys. (O'Sh.)

OCYMUM CRISPUM. Japan.

An infusion of the leaves is said by Thunberg to be used in Japan as a cure for rheumatism. (L.)

OCYMUM HIRSUTUM. India.

Whole plant slightly aromatic; prescribed by the Hindoos, in decoction, in the bowel complaints of children. (O'Sh.)

OCYMUM PILOSUM. India.

Seeds aromatic, used by women to relieve after-pains. (O'Sh.)

OCYMUM SANCTUM. India.

Reported by Ainslie as a febrifuge. (L.)

OCYMUM SUAVE. India.

Used by the natives as a stomachic, and as a cure for infantile catarrh. (L.)

OCYMUM TUBEROSUM. *Java potatoes.* East Indies.

Tubers eaten.

OCYMUM VIRIDE. Africa.

Employed in Sierra Leone as a febrifuge. (L.)

ORIGANUM. (De Cand. Bot. Gal. 375. Endl. Gen. Pl. 617.)

ORIGANUM HERACLEOTICUM. *Bastard marjoram.* South of Europe.

ORIGANUM MAJORANA. *Amaracus, Sampscus, Majorana, Sweet marjoram.* Portugal.

ORIGANUM ONITES. *Marjorana oleracea, Pot marjoram.* Sicily.

*ORIGANUM VULGARE. (E. B. 1143.) *Origanum, Winter marjoram.*

Fl. purple. July, August. Perennial. Dry hills and bushy places.

General properties the same as *Lamium album.* (G.) *O. vulgare* yields what is called *Oil of thyme* in the shops, a common remedy for the pain of toothache in carious teeth; it is frequently used, mixed with olive oil, as a stimulating liniment against baldness, in rheumatic complaints, and against sprains and bruises. (L.) Tops dye purple. (G.) Dried leaves used as tea; oil used as a caustic by farriers. It also dyes linen of a reddish brown colour. (Lou.) Stimulant and carminative. The infusion has been administered in chronic cough, asthma, and amenorrhœa. (Pereira.)

PHLOMIS. (De Cand. Bot. Gal. 364. Endl. Gen. Pl. 629.)

PHLOMIS LYCHNITIS. *Sage-leaf mullien.* South of Europe. Properties like those of *Ballota nigra.*

PRUNELLA. (Endl. Gen. Pl. 620.)

*PRUNELLA VULGARIS. (E. B. 961.) *Prunella, Self-heal.*

Fl. violet blue. July, August. Perennial. Moist and barren pastures.

Bitter, astringent, nearly inodorous, substituted for bark. (G.)

ROSMARINUS. (De Cand. Bot. Gal. 359. Endl. Gen. Pl. 615.)

**ROSMARINUS OFFICINALIS. *Rosmarinus, Rosemary.*

Fl. pale blue. May. Shrub. Native of the south of Europe.

Flowers, *Anthos rorismarini cacumina*, cephalic, nervine, cordial, heating, emmenagogue, used for strengthening; infusion promotes the growth of the hair, and gives it a healthy appearance. (G.) Leaves similar in smell and taste to those of *Salvia officinalis*, but much stronger: they are applied to the same uses. (L.) Carminative and mildly stimulant; Infusion of rosemary is sometimes used as a substitute for ordinary tea by hypochondriacal persons. The admired flavour of Narbonne honey depends on the bees collecting this substance from this plant. (Pereira.) The essential ingredient in the well-known *Eau de la reine d'Hongrie*, is the essential oil of this plant, which is stated most positively to possess the power of encouraging the growth of hair and of curing baldness. It is the colouring ingredient of green pomatum. (O'Sh.)

SALVIA. (De Cand. Bot. Gal. 360. Endl. Gen. Pl. 614.)

SALVIA ÆTHIOPICA. *Ethiopian sage.*

SALVIA CRETICA. *Sage of Crete.* Crete.

**SALVIA HORMIUM. *Hormium, Purple-topped clary.*

Fl. purple, bracts purple or red. July, August. Perennial. Native of the south of Europe.

Excite the nervous system, produce a slight intoxication; used in disorders of the eyes, and are aphrodisiac. (G.)

SALVIA GRANDIFLORA. South of Europe.

Has the same properties as *S. officinalis*, but in a more concentrated degree. (L.) Preferred for making tea. (Lou.)

SALVIA INDICA. East Indies.

Herb put, in Hindostan, into the country beer to improve its flavour.

SALVIA LYRATA. *Cancer weed.* North America.

Root leaves bruised, used to destroy warts and in cancerous cases.

**SALVIA OFFICINALIS. *Common sage.*

Fl. purple, blue, or white. July, August. Small shrub. Native of the south of Europe.

Many varieties, differing in the size, form, and colour of the leaves, as *S. hortensis minor*, *S. virtutis*, *Sage of virtue*, *Small garden sage;* properties heating, sudorific; used in palsy and trembling of the nerves; also cordial, stomachic; stops night sweats, and the flow of milk after weaning; *Galls*, *Baisonge*, eaten. (G.) *S. hortensis major*, *Great garden sage.* A tea made of the leaves of these plants has the reputation of being a stomachic; their aromatic and bitter qualities render them fit to assist the stomach in digesting rich or greasy meats, on which account they are so much employed in cookery. (L.)

**SALVIA SCLAREA. *Clary*, *Sclarea.*

Fl. light blue or whitish. July, August. Perennial. Native of the south of Europe.

Added to wine to give the flavour of Muscadel.

*SALVIA VERBENACA. (E. B. 154.) *Oculus christi*, *Wild clary.*

Fl. purple. July. Perennial. Banks and dry pastures.

SALVIA VERTICILLATA. *Hormium sylvestre*, *Wild clary.* Germany.

Seeds put in the eye become mucilaginous, and thus facilitate the extraction of anything that has got into it.

SATUREJA. (De Cand. Bot. Gal. 370. Endl. Gen. Pl. 617.)

SATUREJA CAPITATA. *Thymum verum*, *True thyme.* The Levant.

Vermifuge.

**SATUREJA HORTENSIS. *Summer savory.*

Fl. whitish. June, August. Annual. Native of the south of Europe.

More acrid and hotter than *Sweet basil*, dyes a yellow colour; employed for culinary purposes.

SATUREJA JULIANA. *S. spicata*, *Rock savory.*

Herb agrees with other savories.

SATUREJA MONTANA. *S. durior*, *S. frutescens*, *Winter savory.*

Used as spice.

SATUREJA THRYMBA. *Thrymba vera*, *True thrymba.*

Herb emmenagogue, used with honey in coughs.

SCUTELLARIA. (De Cand. Bot. Gal. 376. Endl. Gen. Pl. 620.)

*SCUTELLARIA GALERICULATA. (E. B. 523.) *Lysimachria galericulata*, *Common skull-cap*, *Hooded willow herb.*

Fl. blue, downy. July, August. Perennial. Banks of rivers.

Bitter, astringent, nearly inodorous; has been substituted for bark.

SCUTELLARIA LATERIFOLIA. North America.

Extolled in America as a remedy for hydrophobia, but upon no good grounds. (L.)

SIDERITIS. (De Cand. Bot. Gal. 368. Endl. Gen. Pl. 627.)

SIDERITIS HIRSUTA. *Sideritis, Ironwort.* South of Europe.

Herb cures wounds by the first intention.

SIDERITIS MONTANA. *Mountain ironwort.* Austria.

SIDERITIS SCORDIOIDES. *S. flore luteolo, German ironwort.* France.

Properties the same as those of *Scutellaria galericulata.*

SIDERITIS SYRIACA. *Stachys, Base horehound.* Levant.

Leaves acrid, emmenagogue, fœtid.

STACHYS. (De Cand. Bot. Gal. 367. Endl. Gen. Pl. 625.)

*STACHYS BETONICA. (E. B. 1142.) *Betonica officinalis, B. sylvestris, B. vulgaris, Wood betony.*

Fl. purple. July, August. Perennial. Woods and thickets.

Heating and strengthening, made into a tea with honey, diaphoretic, discussive, expectorant. (G.) Intoxicates when fresh; leaves when dry excite sneezing; roots bitter and very nauseous, in a small dose they vomit and purge violently; the plant dyes wool of a very fine dark yellow colour. (Lou.)

*STACHYS ARVENSIS. (E. B. 1154.) *Sideritis arvensis latifolia glabra, Smooth-leaved ironwort, Corn wound-wort.*

Fl. pale purple. July, August. Annual. Dry corn-fields.

*STACHYS PALUSTRIS. (E. B. 1675.) *Panax coloni, Clown's all-heal, Marsh wound-wort.*

Fl. rose purple. August. Perennial. Watery places. Common.

*STACHYS SYLVATICA. (E. B. 416.) *Hedge wound-wort, Stinking dead nettle.*

Fl. purple. July. August. Perennial. Woods and shady places.

Strong-scented, more or less disagreeable, emmenagogue, anti-hysteric, anti-epileptic, expectorant, vermifuge, externally vulnerary. (G.)

TEUCRIUM. (De Cand. Bot. Gal. 362. Endl. Gen. Pl. 631.)

TEUCRIUM BOTRYS. *Jagged germander.* South of Europe.

Used instead of hops.

TEUCRIUM CAPITATUM. *Polium montanum, Poly mountain.* Spain.

Alexiterial.

*TEUCRIUM CHAMÆDRYS. (E. B. 680.) *Chamædrys, Trissago, Creeping germander, Wall germander.*

Fl. reddish purple. July. Perennial. On walls and stony places.

Bitter, tonic, febrifuge. (G.) Is said to have cured the Emperor Charles V. of the gout, by a vinous decoction taken for sixty successive days. (Lou.)

TEUCRIUM CRETICUM. *Polium creticum, Cretan poly mountain.*

Alexiterial.

TEUCRIUM FLAVUM. *Teucrium, Tree germander.* South of Europe.

Leaves used in diseases of the liver and spleen.

TEUCRIUM MARUM. *Marum Syriacum, Cat thyme, Syrian herb mastich.* Spain.

Emmenagogue; cats are very fond of it. (G.) Its active properties deserve investigation. (L.)

TEUCRIUM MONTANUM. *Lavender-leaf poly.* South of Europe.

Alexiterial.

TEUCRIUM POLIUM. *Polium montanum flavum, Yellow poly mountain.* South of Europe.

TEUCRIUM TEUTHRION. *Polium montanum album, White poly mountain.*

Leaves used in diseases of the liver and spleen.

*TEUCRIUM SCORDIUM. *Scordium germander, Water germander.*

Fl. pale purple. July, August. Perennial. Wet meadows. Rare.

*TEUCRIUM SCORODONIA. (E. B. 1543.) *Salvia agrestis, Scorodonia, Wild germander, Wood sage.*

Fl. yellowish white. July, August. Perennial. Woods and heaths.

Used instead of hops. (G.) Beer is said sooner to become clear than when hops are made use of; *T. scordium* was once in high esteem for destroying worms and for fomentations. (Lou.)

THYMBRA. (Endl. Gen. Pl. 620.)

THYMBRA SPICATA. *Mountain hyssop.* The Levant.

Vermifuge.

THYMUS. (De Cand. Bot. Gal. 372. Endl. Gen. Pl. 617.)

THYMUS MASTICHUM. *Marum, Herb mastich.* Spain.

*THYMUS SERPYLLUM. (E. B. 1514.) *Serpyllum, Lemon thyme, Mother of thyme, Wild thyme.*

Fl. purple. July, August. Perennial. Hills and dry pastures.

**THYMUS VULGARIS. *Thymus, Garden thyme, Thyme.*

Fl. purple. July, August. Perennial. Native of the south of Europe.

THYMUS ZYGIS. *T. sylvestris, Wild thyme.* Spain.
Heating and strengthening; made into tea with honey, are diaphoretic, discussive, and expectorant. (G.) The essential oil of *T. vulgaris* is administered to remove flatulence. (L.) Used for culinary purposes.

The drug called in India *Pucha pat* extensively employed by the natives and by the Arabs as an ingredient in tobacco for smoking, and the essential oil as a perfume, is supposed to be a plant belonging to this order. (O'Sh.)

ORDER 118. VERBENACEÆ, (De Cand. Bot. Gall. 377. Endl. Gen. Pl. 632.)

Calyx tubular, generally persistent; *corolla* hypogynous, monopetalous, tubulous, deciduous, generally irregular; *stamens* generally four, didynamous, rarely two or six; *ovary* free, 2—4 celled; *ovules* erect, solitary, or in pairs; *style* one; *stigma* simple, or two-lobed; *pericarp* drupaceous, or baccate, 1—4 nuts (pyrena), which are sometimes enclosed in an utricular membrane; *embryo* straight; *radicle* inferior; *albumen* none. *Herbs* or *shrubs,* with opposite exstipulate *leaves.*

AVICENNIA. (Endl. Gen. Pl. 638.)

AVICENNIA TOMENTOSA. *A. resinifera.* India.
Exudes resin.

CALLICARPA. (Endl. Gen. Pl. 637.)

CALLICARPA LANATA. East Indies.
Bitterish and sub-aromatic; employed in Indian medicine. (L. ex Royle.)

CLERODENDRON. (Endl. Gen. Pl. 637.)

CLERODENDRON INERME. *Volkameria inermis.*
Yields resin. (G.) Has been occasionally employed on account of its slightly bitter and sub-astringent qualities, but is not of much importance. (L.)

CONGIA. (Endl. Gen. Pl. 638.)

CONGIA VILLOSA. East Indies.
Has leaves with a strong, heavy, disagreeable smell; used by the natives of India in fomentations. (L. ex Roxb.)

GMELINA. (Endl. Gen. Pl. 636.)

GMELINA PARVIFLORA. East Indies.
Has the power of rendering water mucilaginous, which is employed in India as a ptisan for the cure of the heat of urine in gonorrhœa. (L. ex Roxb.)

PREMNA. (Endl. Gen. Pl. 636.)

PREMNA INTEGRIFOLIA. Asia, New Holland.

Slightly bitter and astringent; has been occasionally employed in medicine, but is of little importance. (L.)

STACHYTURPHA. (Endl. Gen. Pl. 633, in *Verbena.*)

STACHYTURPHA JAMAICENSIS. *Verbena jamaicensis, Jamaica vervain.* West Indies.

Juice cathartic, deobstruent, emmenagogue. (G.) The expressed juice of the leaves is given in Tortola as a cooling purgative to children, in doses of one or two table-spoonfuls; in the French West Indies, it is employed in decoction for clysters, and also as an anthelmintic; it has, moreover, some reputation for promoting the menstrual discharge; in Brazil, the fresh leaves bruised are applied to ulcers; it is there called *Urgerão*, or *Jarbão.* (L.)

TECTONIA. (Endl. Gen. Pl. 636.)

TECTONIA GRANDIS. *Teak wood.* East Indies.

Leaves used against the thrush and dropsy, and also to purify water. (G.) A timber tree of immense size and great durability, justly called the oak of the east, famed to be the most useful wood in Asia, being easily worked, and at the same time both strong and durable; considered superior to all others for ship-building. (Lou.)

VERBENA. (De Cand. Bot. Gal. 377. Endl. Gen. Pl. 633.)

*VERBENA OFFICINALIS. (E. B. 767.) *Verbena, Common vervain.*

Fl. small, purple. July. Perennial. Road-sides and waste ground.

Febrifuge, vulnerary, used externally as a rubefacient in rheumatism and other pains of the joints; root, worn round the neck, cures scrofulous and scorbutic affections. (G.) Considered by the ancients as a sacred plant, used in making leagues by ambassadors, sacrificial rites, incantations, &c., and by the moderns as an amulet, as well as for medical purposes. (Lou.)

VITEX. (De Cand. Bot. Gal. 377. Endl. Gen. Pl. 635.)

VITEX AGNUS CASTUS. *Agnus castus.* Sicily.

Flowering tops, cooling, drying, and looked upon as anaphrodisiac, whence they were used to strew the beds of the vestal virgins and Christian nuns. (G.) Fruit acrid; according to Forskahl the seeds are reputed at Smyrna to be a certain remedy against colic, if powdered and strewed over half an onion and applied to the stomach. (L.)

VITEX NEGUNDO. East Indies.

In India, a decoction of the aromatic leaves helps to form a warm-bath for women after delivery; bruised, they are applied to the temples for headache; pillows stuffed with them are put under the head to remove a catarrh and the headache attending it. (L. ex Roxb.) Fruit acrid. (L.)

VITEX TRIFOLIA. East Indies.

The leaves are a powerful discutient, and employed by the Malays to remove the boss; the leaves are given in decoction and infusion, and formed into a cataplasm, which is applied to the enlarged spleen. (Roxb.) The fruit is acid, and called in India *Filfil burree*, or *Wild pepper*. (L.)

VOLKAMERIA.

VOLKAMERIA INERMIS. India.

Juice of root and leaves bitter; given as an alterative in venereal complaints and scrofula. Dose, a table-spoonful. (O'Sh.)

ORDER 119. ACANTHACEÆ. (De Cand. Bot. Gal. 378. Endl. Gen. Pl. 696.)

Calyx divided, persistent, often bracteate; *corolla* monopetalous, hypogynous, deciduous, irregular; *stamens* 2—4, didynamous; *ovary* with a glandular disc, surrounding the base, two-celled, cells many-seeded; *style* one: *stigma* bilobate; *capsule* two-celled, cells many-seeded, by abortion one-seeded, bursting elastically with two valves; dissepiment opposite the valves separable into two pieces through the axis, these pieces attached to the valves, sometimes separating from them with elasticity, entire, or occasionally spontaneously separating in two, their inner edge bearing the seeds; *seeds* roundish, hanging by the ascending processes of the placenta; *albumen* none; *radicle* inferior; *cotyledons* foliaceous. *Herbs* or *shrubs*, chiefly tropical; *leaves* opposite, exstipulate; *inflorescence*, terminal, or axillary, in spikes.

ACANTHUS. (De Cand. Bot. Gal. 378. Endl. Gen. Pl. 703.)

ACANTHUS MOLLIS. *Acanthus, Branca ursina, Bear's breech.* Italy.

Leaves diuretic, externally maturative; dye a fine yellow. (G.) Leaves emollient, used for poultices. (L.)

ACANTHUS SPINOSUS. *A. sylvestris, Wild brank ursine.* Italy.

Herb diuretic, astringent.

ADHATODA. (Lindl. Nat. Sys. 285.)

ADHATODA VASICA. *Justicia adhatoda, Malabar nut-tree.* Ceylon.

Leaves purgative. (G.) Flowers, leaves, and roots are supposed to possess antispasmodic qualities, they are bitterish and subaromatic. (L.) The wood is soft, and much esteemed for making charcoal for gunpowder. (O'Sh.)

ANDROGRAPHIS. (Endl. Gen. Pl. 707.)

ANDROGRAPHIS PANICULATA. *Justicia paniculata, Creata.* East Indies, China.

Root and herb externally bitter, stomachic. (G.) Much celebrated as a stomachic, and used as a remedy for cholera and dysentery, and in intermittent fevers; it is the basis of a French mixture called *Drogue amère*, said also to be alexipharmic. (L.)

Barleria. (Endl. Gen. Pl. 701.)

Barleria longifolia. East Indies.

Root diuretic.

Gendarussa. (Endl. Gen. Pl. 705.)

Gendarussa vulgaris. *Justicia gendarussa.* East Indies.

Leaves and tender stalks, when rubbed, have a strong and not unpleasant smell, and are, after being roasted, prescribed in India in cases of chronic rheumatism, attended with swelling at the joints. (Ainslie.) The plant is said to have emetic powers. (L.)

Justicia. (Endl. Gen. Pl. 706.)

Justicia ecbolium. East Indies.

Diuretic. (L.)

Justicia biflora. East Indies.

Leaves emollient. (L.)

Justicia pectoralis. *Balsam.* West Indies.

Vulnerary, resolvent; a syrup is made from it, and used in diseases of the chest. (G.) Esteemed a stomachic in the West Indies. (L.)

Rhinacanthus. (Endl. Gen. Pl. 706.)

Rhinacanthus communis. *Justicia nasuta, J. scandens.* India.

Milk boiled on the roots is reckoned aphrodisiacal in India; rubbed with lime-juice and pepper, they are often used with good effect to cure the ringworm or herpes miliaris, which in India is a most troublesome disease and very common; they are also reckoned alexipharmic. (L.)

Ruellia. (Endl. Gen. Pl. 699.)

Ruellia tuberosa. Jamaica.

Used instead of ipecacuanha.

Order 120. LENTIBULARIÆ. (De Cand. Bot. Gal. 378. (*Utriculariæ.*) Endl. Gen. Pl. 728.)

Calyx divided, persistent; *corolla* monopetalous, hypogynous, irregular, spurred, bilabiate; *stamens* two, included, inserted into the base of the corolla; *anthers* simple, sometimes contracted in the middle; *ovary* one-celled; *style* one, very short; *stigma* bilabiate; *capsule* one-celled, many-seeded, placenta central, large; *seeds* small, exalbuminous; *embryo* sometimes dicotyledonous, sometimes undivided. *Aquatic* or *marsh herbs*; *leaves* radical; *scape* one or many flowered; *flowers* unibracteate, or rarely ebracteate.

PINGUICULA. (De Cand. Bot. Gal. 378. Endl. Gen. Pl. 729.)

*PINGUICULA VULGARIS. (E. B. 70.) *Common butterwort, Yorkshire sanicle.*

Fl. purple. June. Perennial. Bogs and marsh banks.

Leaves heal wounds and chaps in the skin; made into a purging syrup; used to thicken milk, turn it sour, and make it keep for any length of time. (G.) Linnæus says, that the milk of the reindeer, poured on the fresh leaves, and set aside for a day or two, becomes acescent, acquires consistence and tenacity, and neither the whey nor the cream separate; in this state it is reckoned a very grateful food in Sweden and Norway; on cow's milk it acts like common rennet. (Lou.)

ORDER 121. PRIMULACEÆ. (De Cand. Bot. Gal. 379. Endl. Gen. Pl. 729.)

Calyx monosepalous, persistent, 4—5 lobed; *corolla* monopetalous, hypogynous, regular, stameniferous, limb more or less deeply divided; *stamens* inserted into the corolla, equal in number to its lobes, and opposite to them; *ovary* free; *style* one; *stigma* simple; *capsule* one-celled, many-seeded; *placenta* central, free; *embryo* straight, within a fleshy albumen; *radicle* inferior. *Herbs* with opposite rarely alternate *leaves*, or with simple radical ones.

ANAGALLIS. (De Cand. Bot. Gal. 381. Endl. Gen. Pl. 733.)

*ANAGALLIS ARVENSIS. (E. B. 529.) *A. terrestris mas, Pimpernel, Poor man's weather-glass, Scarlet pimpernel.*

Fl. scarlet. June, July. Annual. Corn-fields.

Var. *β. A. cærulea.* (E. B. 1823.) *A. fæmina, Blue-flowered pimpernel.*

Fl. blue.

Used in mania and against hydrophobia; flower used in epilepsy. (G.) Has some reputation in cases of madness; it appears to possess energetic powers, for Orfila destroyed a dog by making him swallow three drachms of the extract; it was found to have inflamed the mucous membrane of the stomach; a similar result was obtained by Grenier; it has been prescribed in epilepsy and dropsy. (L.)

ANDROSACE. (De Cand. Bot. Gal. 381. Endl. Gen. Pl. 730.)

ANDROSACE MAXIMA. *Annual navelwort.* Austria.
Diuretic.

CORTUSA. (De Cand. Bot. Gal. 384. Endl. Gen. Pl. 731.)

CORTUSA MATTIOLI. *Bear's ear sanicle.* Austria.
Cephalic, anodyne, expectorant.

CYCLAMEN. (De Cand. Bot. Gal. 385. Endl. Gen. Pl. 731.)

*CYCLAMEN HEDERÆFOLIUM. (E. B. 548.) *C. Europæum, Artanita, Cyclamen, Ivy-leaved sow-bread, Sow-bread.*

Fl. white or flesh-coloured. April. Perennial. Kent and Suffolk.

Roots drastic, emmenagogue, errhine; leaves bruised and made into a pessary are emmenagogue, and cause abortion; an ointment is made from it, which, when rubbed on the navel, purges and kills worms. (G.) A very acrid plant, especially the root, whose acrimony is not much perceived at the first tasting, but soon becomes intolerable. (Smith.) It has been much used medicinally; its action being that of a drastic purgative, and formerly it was much esteemed as an emmenagogue, but whether its reputation was owing to its actual powers, or to its placentiform root, is doubtful; its acrid principle has been considered to be a body sui generis, and named *Arthanitine.* (L.)

LYSIMACHIA. (De Cand. Bot. Gall. 380. Endl. Gen. Pl. 732.)

*LYSIMACHIA NUMMULARIA. (E. B. 528.) *Nummularia, Herb twopence, Moneywort.*

Fl. yellow. June, July. Perennial. Shady places and wet pastures.

*LYSIMACHIA VULGARIS. (E. B. 761.) *Great loosestrife, Willow herb, Yellow loosestrife.*

Fl. yellow. June, July. Perennial. Sides of rivers and wet shady places.

Astringent.

PRIMULA. (De Cand. Bot. Gal. 383. Endl. Gen. Pl. 731.)

**PRIMULA AURICULA. *Auricula ursi, Garden auricula, Yellow bear's ear.*

Fl. of every hue. May. Perennial. Native of the Alps.

Herb vulnerary and expectorant.

*PRIMULA ELATIOR. (E. B. 513.) *P. veris elatior, Great cowslip, Oxlip primrose.*

Fl. sulphur-yellow. April, May. Perennial. Woods and thickets.

Root emetic; herb anodyne.

*PRIMULA VERIS. (E. B. 5.) *P. veris officinalis, Paralysis vulgaris, Pagils, Common cowslip.*

Fl. yellow. April, May. Perennial. Meadows and pastures.

Flowers used to flavour wine, and render it narcotic. (G.) The flowers possess well-marked sedative properties, and make a pleasant soporific wine. (L.)

*__Primula vulgaris.__ (E. B. 4.) *P. veris acaulis, P. veris vulgaris, P. officinalis, Common primrose.*

Fl. sulphur-yellow. April, May. Perennial. Woods and hedge banks.

Properties same as those of *P. elatior.*

Samolus. (De Cand. Bot. Gal. 385. Endl. Gen. Pl. 734.)

*__Samolus valerandi.__ (E. B. 703.) *Brook weed, Water pimpernel.*

Fl. white. July. Perennial. Waste places on a sandy soil.

Leaves heal wounds and chaps in the skin; made into a purging syrup. (G.) Pliny says the plant was considered among the Gauls as a specific in all maladies of swine; it was collected with mystic ceremonies. (Loud.)

Soldanella. (De Cand. Bot. Gal. 385. Endl. Gen. Pl. 731.)

Soldanella alpina. Switzerland.

Properties the same as those of *Cyclamen hederæfolium.*

Order 122.—GLOBULARIEÆ. (De Cand. Bot. Gal. 386. Endl. Gen. Pl. 639.)

Flowers capitate, surrounded with a polyphyllous involucrum, seated on a chaffy receptacle; *calyx* monosepalous, tubular, five-lobed; *corolla* hypogynous, inserted into the receptacle, tubular, unequally five lobed; *stamens* 4—5, inserted into the upper part of the tube, and alternate with the lobes of the corolla; *anthers* one-celled; *ovary* free, ovoid, with a single pendulous ovule; *style* bifid; *fruit* ovoid, one-seeded, covered with the persistent calyx; *embryo* straight; *radicle* superior; *albumen* fleshy. *Herbs* or *shrubs; leaves* alternate.

Globularia. (De Cand. Bot. Gal. 386. Endl. Gen. Pl. 640.)

Globularia alypum. *Montpelier turbith.* South of Europe.

Root purgative; leaves used for *senna.* (G.) A bitter drastic purgative, once supposed to be the *λυπον* of Dioscorides, and hence called *Frutex terribilis;* this, however, appears to be an error. (L.)

Globularia nudicaulis. Germany.

Globularia vulgaris. Middle of Europe.

Purgative like *G. alypum,* and have been employed as resolvents and vulneraries, according to Lemery. (L.)

Order 123.—PLUMBAGINEÆ. (De Cand. Bot. Gal. 387. Endl. Gen. Pl. 348.)

Perigone double, persistent, the outer row monosepalous, tubular, entire, or toothed, the inner one resembling a corolla, hypogynous, mono or polypetalous; *stamens* five, in the monopetalous plants inserted on the receptacle; in the polypetalous ones, adnate to the base of the petals; *ovary* free, simple, one-seeded, ovule inverse, pendulous from the apex of the funiculus, which springs from the bottom of the ovary; *styles* many or one, with many stigmas; *capsule* one-seeded; *seeds* inverse; *embryo* compressed, surrounded by a farinaceous albumen. *Herbs* or *shrubs*, with simple entire *leaves; flowers* hermaphrodite, capitate, or spicate.

ARMERIA. (De Cand. Bot. Gal. 389. Endl. Gen. Pl. 349.)

*ARMERIA VULGARIS. (E. B. 226.) *A. maritima, Statice armeria, Common thrift.*

Fl. rose-coloured. July, August. Perennial. Muddy sea shores.

Dr. Ebers speaks of the flowers of this plant, vulgarly called "Pissblume" in Germany, as an active diuretic; from two drachms to an ounce of the flowers, freshly gathered, and quickly dried, should be gently boiled, and the patient allowed to drink of the decoction ad libitum; some aromatic, as anise or cinnamon, is added to the decoction; the remedy appears to cause the excretion of urine in a direct manner. (Med. Gaz. xx. 144.) (L.)

PLUMBAGO. (De Cand. Bot. Gal. 387. Endl. Gen. Pl. 349.)

PLUMBAGO EUROPÆA. *Dentaria, Dentillaria, Tooth wort.* South of Europe.

Caustic, corrosive; used by beggars to produce ulcers, in order to excite pity, and in toothache as a masticatory; may be used for ipecacuanha. (G.) A very acrid plant; it has been used to remove toothache, whence its French name, *Dentillaire;* in decoction it has been recommended as a stimulating wash to old and sluggish ulcers, and as a kind of potential cautery to cancers, but Sauvage de la Croix says, that a young woman who had it applied, affirmed that the pain it occasioned was intolerable, and that she felt as if being flayed alive; administered internally, in small doses, it is said to be as effectual an emetic as ipecacuanha. (L. ex Burnett.)

PLUMBAGO ROSEA. East Indies.

Used as a vesicatory. (G.) This is usually believed to be the *Radix vesicatoria* of Rumph. which being sliced and applied to the skin, produces blisters, but less rapidly and effectually than cantharides; it however appears very doubtful whether the Amboyna plant is the same as this. (L.)

PLUMBAGO SCANDENS. *Herbe au diable.* West Indies.

PLUMBAGO ZEYLANICA. East Indies.

Said to have similar properties. (L.) The former used in the itch. (G.)

SALVADORA. (Endl. Gen. Pl. 349.)

SALVADORA PERSICA. *Cissus arborea, Rivina paniculata.* East Indies, Persia, &c.

Fruit has a strong aromatic smell, and tastes like garden cress; bark of root remarkably acrid; bruised and applied to the skin it soon raises blisters, for which purpose the natives of India often use it; as a stimulant, it promises to be a medicine of very considerable power. (Roxb.) It is supposed to be the mustard tree of Scripture. (L.)

STATICE. (De Cand. Bot. Gal. 387. Endl. Gen. Pl. 349.)

STATICE CAROLINIANA. *Marsh rosemary.* United States.

Root, *Statice P. U. S.*, used in dysentery. (G.) Root a most powerful and intense astringent, chiefly used as a local remedy in aphthæ, and similar affections of the mouth and fauces; has been employed with success in cynanche maligna. (L.)

*STATICE LIMONIUM. (E. B. 102.) *Behen rubrum, Limonium maritinum, Red behen, Spreading spiked thrift, Sea lavender.*

Fl. blue. July, August. Perennial. Muddy sea shores.

Root astringent, used in loosenesses, &c.; seeds also astringent; druggists sell under this name, round transverse slices of a root resembling jalap, of a reddish brown colour. (G.)

ORDER 124. PLANTAGINEÆ. (De Cand. Bot. Gal. 390. Endl. Gen. Pl. 346.)

Flowers hermaphrodite, rarely monœcious; *perigone* double, the outer four-partite, persistent; the inner (*corolla?*) monopetalous, tubular, hypogynous, scariose, persistent, bearing stamens at the base; limb four-parted; *stamens* four, inserted into the tube, and alternate with the segments; *filaments* exserted; *anthers* two-celled, the cells dehiscing longitudinally; *ovary* free, simple; *style* one, capillary; *stigma* one, hispid, undivided, rarely semibifid; *capsule* dehiscing transversely by a circular fissure, divided into 2—4 cells by a longitudinal dissepiment, which is either flat or four-sided; *seeds* sessile, peltate, affixed to the sides of the dissepiment, definite, or indefinite in number; *embryo* straight, within a subcorneous albumen; *radicle* inferior.

PLANTAGO. (De Cand. Bot. Gal. 396. Endl. Gen. Pl. 348.)

PLANTAGO ALBICANS. *Holosteum, Spanish plantain.* South of Europe.

Herb vulnerary, used in hernia.

PLANTAGO ARENARIA. Hungary.

Seeds mucilaginous, purgative.

*PLANTAGO CORONOPUS. (E. B. 892.) *Cornu cervinum, Buck's horn plaintain.*

Fl. brownish. June, July. Annual. Gravelly soils on the coast.

Roots and leaves, beaten up with bay salt, are applied as a poultice to the wrists in agues; a decoction of the leaves is given in disorders of the eyes. (G.)

Plantago cynops. South of Europe.

Qualities same as those of *P. areneria.*

Plantago ispaghula. Persia.

A mucilaginous drink is prepared from the seeds in India, and often prescribed by European practitioners where emollients are wanted; it also forms part of the native Materia Medica. (L.)

*Plantago lanceolata. (E. B. 175.) *Rib grass, Ribwort plantain.*

Fl. brownish, scariose. June, July. Perennial. Meadows and pastures.

*Plantago major. (E. B. 1558.) *Way bread, Greater plantain.*

Fl. brownish, scariose. June, July. Perennial. Pastures and road sides.

*Plantago media. (E. B. 1559.) *Hoary plantain, Lamb's lettuce.*

Fl. silvery, scariose. June, July. Perennial. Meadows and pastures.

Roots useful in vernal agues; leaves astringent, vulnerary, used whole as a dressing for wounds; juice of the leaves used as a collyrium, and internally in fevers.

Plantago psyllium. *Psyllium pulicaria, Flea wort.* South of Europe and Barbary.

Seeds mucilaginous, purgative. (G.) The seeds are peculiarly mucilaginous, and have been made into demulcent drinks, as a good substitute for linseed or marsh mallows. (L.) In the north of Europe they are used for washing muslins. (O'Sh.)

Sub-class 4. MONOCHLAMYDEÆ.

Perianth single; *petals* incorporated with the calyx, or entirely wanting.

Order 125. NYCTAGINEÆ. (De Cand. Bot. Gal. 393. Endl. Gen. Pl. 310.)

Involucrum calyciform, monophyllous, one or many flowered; *perigone* monopetalous, coloured, dilated at the base, contracted above the ovary, and then again dilating into a tube, persistent, not adhering to the ovary; *stamens* definite, inserted into a glandular disk, surrounding the ovary; *filaments* adhering to the contracted part of the perigone; *ovary* one, covered by the perigone; *style* one; *stigma* capitate; *capsule* one-seeded, indehiscent, covered by the stameniferous disk and perigone; *embryo* rolled round the farinaceous albumen. *Herbs* or *shrubs*, generally with opposite *leaves.*

BOERHAVIA. (Endl. Gen. Pl. 311.)

Boerhavia decumbens. *B. diandra, B. laxa, Hogmeat.* Guiana, Santa Cruz.

According to Aublet the root is emetic, and called *Ipecaquana* in Guiana; Schomburgh states that it is astringent, and used in the form of decoction in dysentery. (L.)

Boerhavia tuberosa. *Herba purgativa.* Persia.

Roots purgative. (G.) Reported to act both as a purgative and emetic. (L.)

MIRABILIS. (Endl. Gen. Pl. 311. (*Nyctago.*) De Cand. Bot. Gal. 393.)

Mirabilis dichotoma. *Nyctago dichotoma, Jalapa officinarum.*

The thick fleshy root is purgative, and at one time was taken for the jalap of the shops. (L.)

****Mirabilis jalapa.** *Nyctago jalapa, Marvel of Peru.*

Fl. red, pink, white, or striped. July, September. Perennial. Native of Peru.

Root purgative. (G.) Said by some not to be purgative, by others to be so, and to be used for adulterating true jalap. (L.)

****Mirabilis longiflora.** *Nyctago longiflora, Long-tubed marvel of Peru.*

Fl. as M. jalapa. August, September. Annual. Native of Mexico.

The root is said to be more purgative than that of any other species. (L.)

ORDER 126. AMARANTHACEÆ. (De Cand. Bot. Gal. 393. Endl. Gen. Pl. 303.)

Perigonium (*calyx?*) free, monosepalous, persistent, 4—5 lobed, often coloured; *stamens* three or five, hypogynous, free, or monadelphous; *ovary* one, one-celled, rarely two-celled, one, or rarely many-ovuled; *style* and *stigma* simple or numerous; *capsule* one-celled, dehiscing transversely or indehiscent; *seed* solitary, or rarely numerous, affixed to a central receptacle; *albumen* farinaceous, encircled by the curved *embryo*. *Herbs*, with alternate entire *leaves*; *flowers* small, spiked, panicled, or capitate, often of distinct sexes.

ACHYRANTHES. (Endl. Gen. Pl. 303.)

Achyranthes aspera. India.

An infusion of the root given as a mild astringent in bowel complaints; the flowering spike, made into pills with a little sugar, is a popular preventive medicine, in Behar, for persons bitten by rabid dogs; the root is used by the natives as a tooth brush. (O'Sh.)

AMARANTHUS. (De Cand. Bot. Gal. 393. Endl. Gen. Pl. 303.

***Amaranthus blitum.** (E. B. 2212.) *Blitum minus, All seed, Wild amaranth, Upright blite.*

Fl. greenish. August. Annual. Low waste grounds near towns.

Refrigerant, slightly astringent, used as a potherb.

AMARANTHUS CAUDATUS. *Amaranthus, Flos amoris, Flower gentle, Love lies bleeding.* East Indies.

Flowers slightly astringent. Brazil.

AMARANTHUS MELANCHOLICUS.

Used for emollient poultices by the natives.

AMARANTHUS OBTUSIFOLIUS.

Mentioned as a diuretic, but not found in systematic works. (L.) East Indies.

AMARANTHUS OLERACEUS.

AMARANTHUS VIRIDIS. *Blitum album, Blitum rubrum, Great white blite, Red blite.* Brazil.

Used as potherbs. (G.) *A. viridis* used in Brazil for emollient poultices. (L.) Nearly all the species of Amaranthus may be used as emollients in enemata, cataplasms, diluents, drinks, &c. (O'Sh.)

GOMPHRENA. (Endl. Gen. Pl. 301.)

GOMPHRENA OFFICINALIS. South and middle of Brazil.

Root is employed for nearly the same purposes as *Aristolochia serpentaria*, in North America; it appears to be a stimulating tonic; the thick club-shaped root is chiefly used in spasms, dyspepsy, intermittent fevers, diarrhœa, &c., and is called *Paratodo*. (L.)

GOMPHRENA POLYGONOIDES. *Achryanthes repens.*

Root and flowers narcotic. (G.)

ORDER 127. CHENOPODEÆ. (De Cand. Bot. Gal. 394. Endl. Gen. Pl. 292.)

Perigone free, monosepalous, five-parted, æstivation imbricated; *stamens* inserted into the lower part of the perigone, equal in number to its segments; *ovary* one; *style* one, or many; *fruit* indehiscent, either a many-celled many-seeded berry, or a cariopsis, either naked, or covered by a membranous perigone; *albumen* generally farinaceous, central, the *embryo* spirally or circularly twisted round it; *radicle* inferior. *Herbs* or rarely *shrubs*, with alternate simple *leaves*, and destitute of stipules or sheaths; *flowers* small, greenish, often hermaphrodite.

ATRIPLEX. (Bot. Gal. 397. Endl. Gen. Pl. 293.)

*ATRIPLEX ANGUSTIFOLIA. (E. B. 1774.) *A. patula* (*Huds.*), *Narrow leaved orache, Spreading narrow leaved orache.*

Fl. greenish. July. Annual. Cultivated and waste ground.

Seeds emetic, sudorific, antidysenteric; a substitute for ipecacuanha. South of Europe.

ATRIPLEX HALIMUS. *Sea purslane.*

Used as a potherb.

**ATRIPLEX HORTENSIS. *Garden orache, Orache.*

Fl. greenish. July, August. Annual. Native of Tartary.

Emollient, seeds emetic. (G.) Seeds reputed to be emetic; the leaves an old fashioned potherb, once cultivated in lieu of spinach. (L.)

*ATRIPLEX LITORALIS. (E. B. 708.) *Grass leaved sea orache, Sea orache.*

Fl. greenish, mealy. July. Annual. Muddy salt marshes on the east coast.

Leaves and young shoots pickled and eaten in the manner of samphire.

*ATRIPLEX PORTUALACOIDES. (E. B. 261.) *Portalaca marina, Sea purslane, Shrubby orache.*

Fl. yellowish. July, August. Small shrub. Muddy sea shores.

Leaves and shoots pickled, and used to procure an appetite; warming, also cosmetic.

BASELLA. (Endl. Gen. Pl. 298.)

BASELLA CORDIFOLIA. East Indies.
BASELLA RUBRA. East Indies.
Esculent.

BETA. (De Cand. Bot. Gal. 399. Endl. Gen. Pl. 295.)

**BETA VULGARIS. *Common beet.*

Fl. greenish. August, September. Biennial, Cultivated in gardens and fields.

B. vulgaris alba, White beet, roots yield sugar; leaves eaten as spinach.

B. vulgaris rubra, Red beet, root red, nutritive, yields sugar. (G.) This is a well known culinary root, used in salads either raw or boiled, forming a beautiful varnish, very much used as a pickle, preserved as a confiture, made a substitute for coffee, and yielding a sugar equal to that of the cane; the varieties most esteemed for salad are the small red and custebrandary, and for extracting sugar the green topped. (Loud.)

Beta hybrida, Mangel wurtzel, Root of scarcity, root red outside, white inside, very nutritive, yields sugar, leaves eaten as spinach. (G.) This is merely a coarse cultivated variety of *B. vulgaris.* (M'W.)

BLITUM. (De Cand. Bot Gal. 399. Endl. Gen. Pl. 295.)

BLITUM CAPITATUM. *Strawberry spinach.* Austria.
Laxative.

CAMPHOROSMA. (De Cand. Bot. Gal. 395. Endl. Gen. Pl. 294.)

CAMPHOROSMA MONSPILIACUM. *Camphorata, Stinking ground vine.* South of Europe.

Nervine, cephalic, antarthritic. (G.) Abounds with a volatile oily salt, and is warm and stimulating. (Loud.)

Chenopodium. (De Cand. Bot. Gal. 396. Endl. Gen. Pl. 296.)

Chenopodium ambrosioides. *Mexican tea.* United States.

Stomachic, antiasthmatic, used as tea. (G.) All the plant has an agreeable penetrating smell; it has been used with advantage in the treatment of nervous diseases, and Plenck recommends it in chorea. (L.)

Chenopodium anthelminticum. *Worm goose foot, Worm seed.* United States.

Chenopodium, P. U. S., expressed juice vermifuge. (G.) The whole plant has a strong, heavy, disagreeable odour; it yields from the seeds an abundance of oil, which, under the name of *Wormseed oil*, is powerfully anthelmintic; the expressed juice, or the leaves or seeds in powder, have similar properties. (L.)

Chenopodium barysosmon. Upper Egypt.

An excessively fœtid plant, which Mr. Burnett supposed may be used for the same purposes as *C. olidum.* (L.)

*Chenopodium bonus henricus. (E. B. 1033.) *Mercurialis, Tota bona, All good, English mercury.*

Fl. greenish. August. Perennial. Waste places and way sides.

Herb laxative, eaten as spinach; the roots as asparagus. (G.) Leaves sometimes applied to wounds, and for cleansing old ulcers. (Loud.)

Chenopodium botrys. *Ambrosia, Botrys, Oak of Jerusalem.* South of Europe, North America.

A stinking plant, used, when beat up with sugar, as an emmenagogue, antihysteric, and vermifuge; decoction used externally in eruptions. (G.) The whole plant powerfully and agreeably fragrant; it is reported by the French physicians to be a valuable expectorant, and to have been employed with much advantage in catarrh and humoral asthma. (L.)

*Chenopodium murale. (E. B. 1722.) *Pes anserinus, Goosefoot, Nettle leaved goosefoot.*

Fl. greenish. August. Annual. Waste places near towns.

Properties similar to those of *C. bonus henricus.*

*Chenopodium olidum. (E. B. 1034.) *Atriplex olida, C. vulvaria, Stinking goosefoot, Stinking orache.*

Fl. greenish. August. Annual. Waste places.

Emmenagogue, antihysteric and vermifuge, decoction used externally in eruptions. (G.) According to Chevalier, this plant exhales pure ammonia during its whole existence; notwithstanding its nauseous odour, it is still employed as an antispasmodic and emmenagogue, and is constantly to be found in the herb shops of Covent Garden Market. (L.)

CHENOPODIUM QUINOA. *Quinoa.* Peru.

Used as a potherb; seeds a substitute for rice.

*CHENOPODIUM VIRIDE. (E. B. 1723.) *Atriplex sylvestris, Smooth seeded goosefoot, Wild orache,* (Var. *β*, *C. leiospermum.*) (De Cand.)

Fl. greenish. July, August. Annual. Waste places and dunghills.

Herb laxative, discusses whitlows; seeds used in the jaundice.

SALICORNIA. (De Cand. Bot. Gal. 395. Endl. Gen. Pl. 293.)

SALICORNIA FRUTICOSA. Europe.

Yields *Barilla* by burning.

*SALICORNIA HERBACEA. (E. B. 2475.) *Jointed glasswort, Marsh samphire.*

Fl. green. August, September. Annual. Salt marshes.

Pickled, is eaten as samphire.

SALSOLA. (De Cand. Bot. Gal. 395. Endl. Gen. Pl. 298.)

SALSOLA INDICA. East Indies.

Green leaves universally eaten by all classes of natives who live near the sea, and are reckoned very wholesome; the leaves of this plant alone saved many thousand lives during the famine of 1791-2-3. (O'Sh.)

*SALSOLA KALI. (E. B. 634.) *Kali, Saltwort, Prickly saltwort.*

Fl. green. July, August. Annual. Sandy sea-shores.

Emmenagogue, diuretic, and hydragogue; yields *Barilla* by being burned. (G.)

SALSOLA SATIVA. *Kali Hispanicum, Alicant glasswort.* Coast of Spain.

SALSOLA SODA. *Kali, Glasswort.* South of Europe, North of Africa.

SALSOLA TRAGUS. South of Europe, North of Africa, &c.

All yield *Barilla* by burning. (G.) According to Guibourt, the sodas of commerce are furnished by the following plants; *Soda of Alicant*, which is the finest by *S. sativa, kali, soda,* and *tragus;* it contains from twenty-five to forty per cent. of carbonate of soda; *Soda of Narbonne* by *Salicornia annua.* (Lin.) It contains 14—15 per cent. of Carb. soda; *Blanquette,* or *Soda of Aiguesmortes*, procured from a mixture of salt plants, with from 3—4 per cent. of the carbonate; finally, *Normandy soda*, obtained from *Fucus.* (L.)

SPINACHIA. (De Cand. Bot. Gal. 399. Endl. Gen. Pl. 294.)

**SPINACHIA INERMIS. *Smooth spinach.*

**SPINACHIA SPINOSA. *Rough spinach.*

Flowers green. July. Annual, Biennial. Native country unknown.

Leaves emollient, opening, boiled as greens.

ORDER 128. PHYTOLACCACEÆ. (Endl. Gen. Pl. 975. Lindl. Nat. Ord. 210. *Chenopodeæ.* De Cand. Bot. Gal. 399.)

Calyx of four or five petaloid leaves; *stamens* either indefinite, or, if equal to the number of the divisions of the calyx, alternate with them; *ovary* of one or of several cells, each containing one ascending ovule; *styles* and *stigmas* equal in number to the cells; *fruit* baccate or dry, entire or deeply lobed, one or many celled; *seeds* ascending, solitary, with a cylindrical *embryo* curved round mealy *albumen*, with the *radicle* next the hilum. *Under shrubs* or *herbaceous plants; leaves* alternate, entire, without stipules, often with pellucid drops; *flowers* racemose.

PHYTOLACCA. (De Cand. Bot. Gal. 399. Endl. Gen. Bot. 977.)

PHYTOLACCA DECANDRA. *Jucato calleloe, Poke, American pokeweed, Garget, Cocum, Jalap, Pigeon berries.* North America.

Root, *Phytollacca, P. U. S.*, emetic, infusing one oz. in a pint of wine, and taking two spoonfuls; juice red. A very common domestic purge in America; leaves bruised, very detersive, of great use in cancerous cases as a poultice; young shoots eaten as asparagus; berries yield a red dye, but which does not stand; used to colour wine. (G.) Root an emetic approaching nearly to *Ipecacuanha.* Bigelow says, "from abundant experience, the result of many trials made in dispensary practice, I am satisfied that when properly prepared it operates in the same doses and with the same certainty as that drug." Its exhibition is sometimes attended by slight narcotic symptoms; externally applied, it excites a sense of heat and smarting; it cures psora and tænia capitis. (L.) The Anglo-American name *Poke* is a corruption of *Pocan*, the name by which it was formerly known in Virginia. (Loud.)

RIVINA. (Endl. Gen. Pl. 976.)

RIVINA HUMILIS. *Herbe aux charpentiers.* West Indies. Pectoral.

ORDER 129. POLYGONEÆ. (De Cand. Bot. Gal. 400. Endl. Gen. Pl. 304.)

Perigone free, simple, persistent, monosepalous, deeply divided, segments disposed in a double row, the inner one opposite to the sides of the ovary, the outer one opposite to its angles; *stamens* definite, inserted into the base of the perigone; *anthers* two-celled, four-furrowed, dehiscing laterally by a double chink; *ovary* one, free; *styles* many, or *stigmas* numerous, sessile; *cariopsis* more or less covered by the perigone, one-seeded; *embryo* lateral, or central, often curved; *albumen* farinaceous. *Herbs* with nodose stems, and alternate sheathing leaves, or with an interfoliaceous sheath or ochrea; *leaves* revolute when young.

Herbs acid or astringent, containing oxalic acid; contain also a red colouring matter, and may be used in tanning, and leaves may be made to yield *woad.*

COCCOLOBA. (Endl. Gen. Pl. 308.)

COCCOLOBA UVIFERA. *Sea-side grape.* West India Islands and North America.

Fruit very astringent, yields *Jamaica kino.* (G.) Leaves, wood, and bark excessively astringent; the decoction prepared by evaporation forms *Jamaica kino;* the fruit is eatable, and commonly sold in the West Indian market, but it is not much esteemed; the wood yields a red dye. (L.)

POLYGONUM. (De Cand. Bot. Gal. 403. Endl. Gen. Pl. 306.)

*POLYGONUM AMPHIBIUM. (E. B. 436) *Amphibious persicaria.*

Fl. bright rose-coloured. July, August. Perennial. Ponds and lakes.

The root-like stems of this polygonum bear some resemblance to *Sarsaparilla*, and according to Coste and Willemet are substituted for the foreign drug, by the herbalists of Nancy; these authors also report, that it resembles true sarsaparilla in its properties, and that the apothecaries and druggists of Lorraine use it in preference. (L.)

*POLYGONUM AVICULARE. (E. B. 1252.) *Centinodia, Polygonum, Common knot-grass.*

Fl. pale rose-coloured. May, September. Annual. Waste places.

Herb vulnerary, astringent; seeds nauseously aromatic, emetic, sometimes purgative. (G.) Fruit said to be emetic and cathartic. (L.)

POLYGONUM BARBATUM. China, East Indies, &c.

Considered as a diuretic at the Cape of Good Hope. In India, an infusion of its leaves is prescribed by native practitioners to alleviate the pain of severe colic. (L. ex Burnett.)

*POLYGONUM BISTORTA. (E. B. 509.) *Bistorta, Bistort, Snake-weed.*

Fl. flesh-coloured. June. Perennial. Moist meadows.

Root, *Bistortæ radix*, very astringent, dose ℈j. to ʒj., tans leather very well; young roots eaten as greens. (G.) A powerful astringent; the decoction may be employed in gleet and leucorrhœa as an injection, as a gargle in relaxed sore throat and spongy gums, and as a lotion to ulcers attended with excessive discharge; internally, it has been employed, combined with gentian, in intermittents; it may also be used in passive hæmorrhages and diarrhœa. (L. ex Pereira.) The young shoots were formerly eaten in herb puddings in the north of England, where it is known by the name of *Easter giant*, and about Manchester they are substituted for greens under the name of *Patience dock*. (Loud.)

*POLYGONUM CONVOLVOLUS. (E. B. 941.) *Volubilis nigra, Black-bird weed, Climbing buck wheat.*

Fl. greenish. July, August. Annual. Corn-fields.

Seeds equally nutritive as those of *P. fagopyrum*, and much easier to cultivate.

*POLYGONUM FAGOPYRUM. (E. B. 1044.) *Fagopyrum, Buck wheat.*

Fl. pale red. July, August. Annual. About cultivated land, a doubtful native.

Seeds nutritive, fattening, well flavoured, made into bread, yield an oil. (G.) In China and other countries of the East it is cultivated as bread corn; the flour is also used in cookery and bread-making in various parts of Europe; to make cakes or crumpets in England, and as rice or gruel in Germany and Poland; the seed is said to be excellent for horses and poultry, the flowers for bees, and the plant green for soiling cows, cattle, sheep, or swine. (Loud.)

*POLYGONUM HYDROPIPER. (E. B. 989.) *Persicaria, Arse smart, Biting persicaria, Water pepper.*

Fl. reddish. August, September. Annual. Sides of lakes and ditches.

Vulnerary, detersive, and diuretic; dyes wool yellow; juice acidulous, acrid, sharp. (G.) Leaves so acrid as to act as vesicants; it is reputed to be a powerful diuretic, but to lose its activity by drying, on which account it requires to be used fresh. (L.)

*POLYGONUM PERSICARIA. (E. B. 756.) *Persicaria, Dead arse smart, Spotted persicaria.*

Fl. greenish, tipped with rose. August. Annual. Moist ground and waste places.

Properties the same as those of *P. hydropiper*. (G.)

RHEUM. (Endl. Gen. Pl. 306.)

This genus is very important on account of the officinal *Rhubarb* being produced by some of the species; it is, however, not a little curious, that up to the present time, no one should have ascertained with precision, from which of the many known species any of that which finds its way to Europe through Turkey and Russia is really obtained. It is probable that Professor Royle is correct in his opinion that the officinal drug, obtained in the heart of Thibet, whither no botanist has ever penetrated, is the produce of some species still unknown; his account of the origin of officinal rhubarb is as follows: "The rhubarb of commerce is well known to be brought by the Chinese to the Russian frontier town of Kiachta, according to the treaty formed between those powers in 1772; the Chinese obtain the rhubarb produced in China Proper from that part of the province of Shensee now called Kansee, situated between north latitude 35° and 40°, but the best, according to the missionaries, who say it is called Tai Hoang in the province of Letchuen, from the mountains called Suechan, or of Snow, which extend from north latitude 26° to 35°, and from about 100° to 105° of east longitude; that from the latter province probably forms much of what is called *China rhubarb:* the missionaries met large quantities of it brought down in the months of October and November; that from Kansa may afford some of what is called *Russian rhubarb*, but both Pallas and Rehman have ascertained that the greater portion, if not the whole of this, is obtained in April and May from the clefts of rocks in high and arid mountains, surrounding Lake Kokonor. Bell also learned that it was the produce of Mongolia, and Marco Polo of Succuir in Tanguth. Dr. Rehman ascertained that the trade is in the hands of one Bucharian family, who farm the monopoly from the Chinese government, and reside at Si-ning, a Chinese town on the very frontiers of Thibet, 3000 verstes from Kiachta, and twenty days' journey from Kiansin and Schansin, Tangutian towns, where the Bucharians go to purchase rhubarb; this would bring the rhubarb country within 95° of east longitude, in 35° of north latitude, that is in the heart of Thibet." Rhubarb in small doses is an astringent tonic, its operation being principally or wholly confined to the digestive organs. In relaxed conditions of these parts, it promotes the appetite, assists the digestive process, improves the quality of the alvine secretions, and often restrains diarrhœa. In large doses it operates slowly and mildly as a purgative, it has also been used as a topical application to promote the healing of indolent, non-painful ulcers. (Pereira.)

RHEUM CASPICUM.	Altaic mountains.
RHEUM COMPACTUM.	Tartary, China.

Roots supposed to be mixed with those of *R. palmatum.* (G.) Guibourt says, that the root of this is a pretty good imitation of Chinese rhubarb, but when cleared of the yellow powder that covers it, there is no difficulty in recognizing it by its reddish or whitish red colour, its smell of "Rhapontic," (in which respect it corresponds with *R. undulatum,*) its close radiated marbling, its staining the saliva yellow only in a slight degree, and in its not being gritty. (L.)

RHEUM CRAPENERVUM. Native country unknown.

This plant was sent by Dr. Fischer from the imperial garden at St. Petersburg with this name, and was placed in the apothecaries' garden at Chelsea; Mr. Wm. Anderson, the gardener there, states that the roots, when three years old, being accidentally uncovered, were found as thick as the wrist, and brittle, and when examined at Apothecaries' Hall, were found to possess the peculiar colour and odour of the best Turkey rhubarb. (L.)

RHEUM EMODI. Mountains of Gossain Than, Kamaon.

When this plant was first made known, it was stated by Professor Don to be the undoubted origin of the Russian and Turkey rhubarbs; but Dr. Pereira, who had samples of the root from Dr. Wallich, found that the specimens had hardly any resemblance to the rhubarb of the shops; the roots of this and of *R. Webbianum*, nevertheless appear to be valuable as medicines, for Mr. Twining reported that, after an experience of forty-three cases in the general hospital at Calcutta, he found them as tonic and astringent, superior to corresponding quantities of the best rhubarb, but not, on the whole, so eligible in obstinate costiveness, on account of their aroma and astringency; they are less disagreeable to take than the best Turkey rhubarb, nearly as efficacious as a purge, and very superior in small doses as a tonic and astringent in profluvia. (L.)

RHEUM LEUCHORIZUM. Tartary.

"When Pallas was at Kiachta, the Bucharian merchants, who supplied the crown with rhubarb, brought some pieces of rhubarb which had a white colour, and was equal in its effects to the best sorts." (Pereira.) It is said to have been the produce of this plant. (L.)

RHEUM PALMATUM. Chinese Tartary.

This has been considered one of the sources of Tartarian rhubarb; Pallas was, however, assured by the Bucharian merchants, that they knew nothing of such leaves as those of this species, and that the leaves of genuine rhubarb were round, and much cut at the edges; Pallas considered this account to agree best with *R. compactum*, nevertheless the opinion that *R. palmatum* is the source of the true officinal rhubarb, continues to be generally entertained. In the last edition of the London Pharmacopœia this is asserted, and M. Guibourt declares that of all the cultivated kinds this alone resembles exactly in colour and smell the rhubarb of China; it is stated by Stevenson and Churchill that this plant is extensively cultivated near Banbury for the supply of the London market. The cultivation of rhubarb for medicinal use was commenced in the neighbourhood of Banbury about the year 1789, by Mr. Hayward, an apothecary of that place, to whom the gold medal of the Society of Arts was awarded in the year 1794, for the cultivation of the "true rhubarb," or "*Rheum palmatum.*" It has since been stated that the rhubarb grown at Banbury is not the *Rheum palmatum*, but *Rheum rhaponticum.* About twenty tons of rhubarb for medicinal use are annually sent into the London market from Bombay.

RHEUM RHAPONTICUM. Borders of the Euxine and Caspian seas.

According to Guibourt, the root is bitter, astringent, and aromatic; when chewed, mucilaginous, and not at all gritty; the smell like that of rhubarb, but more disagreeable; it is cultivated in large quantities at a place called Rheumpole, near L'Orient, in the department of Morbihan; the prepared root is said to be extremely like rhubarb in appearance, and to be what was analysed by M. Henry as French rhubarb. (L. ex Bull. de Pharmacie, vol. vi. p. 87.)

This is one of the species cultivated for domestic use in pies, &c.

RHEUM RIBES. *Wharted-leaved rhubarb.* Levant.

The specific name of this species has been derived from its application in the preparation of a root, formerly used in medicine, and called *Rybes of Serapias.*

RHEUM SPICIFORMA. Himalayas.

Roots lighter coloured, and more compact than those of *R. emodi;* Dr. Royle says that the rhubarb sent by the late Mr. Moorcroft from near Ludak was, for compactness of texture, colour, and properties, as fine as any he has ever seen; it is not improbable it may have been furnished by this species. (L.)

RHEUM UNDULATUM. China.

Roots supposed to be mixed with those of *R. palmatum.* (G.) A Tartarian merchant, a dealer in rhubarb, gave what were, or what were said to be, seeds of the genuine rhubarb plant to Kauw Boerhaave, first physician to the emperor of Russia, about the year 1750, and those seeds produced both R. undulatum and R. palmatum; Georgi further states, that a Cossack pointed out to him the leaves of the former as the true species; hence it was at once regarded as the real officinal plant, and cultivated as such by the Russian government, but the culture is discontinued, and Guibourt states that he never could make real rhubarb from it; it is cultivated in France, and forms a part of the *French rhubarb;* Stevenson and Churchill say, that what is sold in the herb-shops under the name of *English rhubarb* is this; but this does not appear to be accurate, as the common garden rhubarbs are *R. rhaponticum*, *Hybridum*, *Compactum*, and some hybrid varieties. (L.)

Malabar rhubarb. Plant not determined, root coarse; acrid, and very nauseous.

RUMEX. (De Cand. Bot. Gal. 400. Endl. Gen. Pl. 308.)

*RUMEX ACETOSA. (E. B. 127.) *Acetosa, Common sorrel.*

Fl. purplish. June, July. Perennial. Meadows and pastures.

Leaves *Acetosæ folia.* (G.) An agreeably acid plant; it acts as a refrigerant and diuretic; a decoction of the leaves may be employed in the form of a whey as a cooling and pleasant drink in febrile and inflammatory diseases. (L.)

*RUMEX ACETOSELLA. (E. B. 1674.) *Acetosella, Sheep's sorrel.*

Fl. reddish. May, July. Perennial. Dry pastures and heaths.

Root cooling, purges; leaves contain much oxalate of potash, very cooling, antiscorbutic, eaten in salads, make excellent whey by boiling a few in milk. (G.)

*RUMEX ACUTUS. (E. B. 724.) *Lapathum acutum, Oxylapathum, Sharp-pointed dock, Sharp dock.*

Fl. greenish. July. Perennial. Moist places. Common.

Root has the same qualities as foreign rhubarb, but the dose must be nearly doubled; used in powders, tinctures, and infusions, instead of rhubarb; eaten whilst young as a pot-herb, and used in dyeing. (G.)

RUMEX ALPINUS. *Monk's rhubarb.* Alps of Europe.

Root thick, fleshy, purgative like rhubarb, only in a much less degree; it was taken by Linnæus for a variety of *Rheum rhaponticum.* (L.)

RUMEX BRITANNICA. *R. xanthorrhiza, Water dock.* North America.

Properties similar to those of *R. acutus.*

RUMEX CRISPUS. (E. B. 1998.) *Lapathum crispum, Curled dock.*

Fl. greenish, with orange-coloured tubercles. June, July. Perennial. Way sides.

Seeds antidysenteric; roots bruised and made into an ointment cure the itch. (G.) This common weed has the reputation of being in decoction or ointment a cure for the itch; the root, which is astringent, is the part used. (L.)

*RUMEX HYDROLAPATHUM. (E. B. 2104.) *R. aquaticus, Hydrolapathum, Great water dock.*

Fl. greenish. July. Perennial. Ditches and river sides.

Properties similar to those of *R. acutus.* (G.) Root astringent, reputed antiscorbutic. (Pereira.)

*Rumex obtusifolius. (E. B. 1999.) *Rhabarbarum monachorum*, *Blunt-leaved dock*, *Broad-leaved dock*, *Monk's rhubarb.*

Fl. greenish, red at the base. July. Perennial. Way sides and waste places.

Properties the same as those of *R. acutus.* (G.) Properties similar to those of *R. crispus;* the root in powder also employed as a dentifrice. (L.)

Rumex patientia. *Lapathum sativum*, *Patientia*, *Garden patience.* Italy.

Properties similar to those of *R. acutus.* (G.) It is so called from the slowness of its operation as a medicine. (Loud.)

*Rumex sanguineus. (E. B. 1533.) *Lapathum sanguineum*, *Bloody dock*, *Bloodwort*, *Veined dock.*

Fl. greenish. July. Perennial. Shady pastures, woods, road sides.

Has similar properties to those of the last species.

Rumex scutatus. *Acetosa Romana*, *French sorrel.*

Properties the same as those of *R. acetosella.*

ORDER 130. THYMELEÆ. (De Cand. Bot. Gal 405. Endl. Gen. Pl. 313.)

Perigone free, coloured, monopetalous, tubular, limb four (rarely five) cleft, æstivation imbricated; *stamens* definite, inserted on the fauces or tube, double the number of the segments of the perigone; *anthers* two-celled, the cells dehiscing longitudinally in the middle; *ovary* one, with a single pendulous ovule; *style* one, often lateral; *stigma* one; *fruit* single, one-seeded, covered by the perigone, dry, or baccate; *albumen* none, or thin, fleshy; *embryo* straight; *radicle* superior, short; *cotyledons* plano-convex. *Shrubs* with simple, entire, exstipulate *leaves; flowers* generally hermaphrodite, sometimes, by abortion, diœcious.

Plants of this order are caustic, particularly their bark.

Daphne. (De Cand. Bot. Gal. 406. Endl. Gen. Pl. 330.)

Daphne cannabina. Nepaul.

From this shrub the Nepaul paper is prepared. (O'Sh.)

Daphne cneorum. *Cneorum niger*, *Rock rose.* Alps.

Daphne gnidium. *Thymelæa*, *Spurge flax.* South of Europe.

*Daphne laureola. (E. B. 119.) *Charmed daphne*, *Laureola*, *Evergreen spurge laurel.*

Fl. yellowish green. March. Shrub. Woods and thickets.

*Daphne mezereum. (E. B. 1381.) *Chamælæa*, *Laureola fœmina*, *Mezereum*, *Mezereon*, *Spurge olive.*

Fl. pink or white, fragrant. March. Shrub. Woods. Rare.

Have all similar qualities, but *D. gnidium* seems the most efficacious; bark of all these serves as a vesicatory, and ulcerates the parts to which it is applied; it has been chewed in palsy of the tongue with success; taken internally, in doses of only a few grains, it is a dangerous drastic, working both upwards and downwards; berries *Grana gnidia*, equally drastic, added to vinegar to give it apparent strength; herb used to dye yellow; both the bark and berries are steeped in vinegar, and dried, to render them milder. (G.) In Germany, the bark of the stem and larger branches of *D. mezereum* is removed in spring, folded in small bundles, and dried for medicinal use; in this country, the bark of the root is employed; its taste is at first sweetish, but afterwards highly acrid; all the parts are excessively acrid, and act as a local irritant poison; Voigt says, that it vomits and purges, and affects the urinary organs, and that death takes place from its local operation; as a local irritant, Mezereon bark is employed in France under the name of *Garou*, to produce vesication; in this country, it is frequently employed as a topical application for toothache; Dr. Withering cured a case of difficulty of swallowing by Mezereon, which he directed to be chewed frequently. It has been recommended internally in venereal complaints, but it appears not to have any influence over such maladies; Dr. Cullen says, he has employed it with success in some cutaneous maladies. (L. ex Pereira.) *D. laureola* and *D. gnidium* have similar properties. (L.) In this country Mezereon is usually administered in conjunction with *Sarsaparilla*, and is employed as a sudorific and alterative in venereal, rheumatic, scrofulous, and chronic cutaneous diseases. (Pereira.)

DIRCA. (Endl. Gen. Pl. 329.)

DIRCA PALUSTRIS. *Leatherwood*. North America.

Bark acrid, emetic, gr. v. to x.; externally produces blisters. (G.) Bark acrid, in the dose of six or eight grains it produces heat in the stomach, and brings on vomiting, especially when fresh; it sometimes acts also as a cathartic; the bark is vesicatory in a very slow degree; the fruit is narcotic, producing effects like those of *Stramonium*. (L. ex Bigelow.)

LAGETTA. (Endl. Gen. Pl. 332.)

LAGETTA LINTIARIA. *Daphne lagetto, Lace bark*. Jamaica, West Indies.

Bark possesses qualities similar to that of Mezereon, and is used for the same medical purposes; it is remarkable for separating readily into a great number of thin white layers, which being stretched laterally, assume the appearance of the finest lace-work; it may even be washed with soap like linen. (L.)

PASSERINA. (De Cand. Bot. Gal. 406. Endl. Gen. Pl. 330.)

PASSERINA TARTON RAIRI. *Daphne tarton rairi, Sanamunda, Heath spurge.* France.

Leaves caustic.

PASSERINA TINCTORIA.

Used to dye yellow.

ORDER 131. HERNANDIACEÆ. (Endl. Gen. Pl. 332. (*Daphnoideis affinia.*) Lindl. Nat. Syst. 195.)

Flowers monœcious, or hermaphrodite, with a calycine involucre to the females, or hermaphrodites; *calyx* petaloid, inferior, tubular, 4—8 parted, deciduous; *stamens* definite, inserted into the calyx in two rows, of which the outer is often sterile; *anthers* bursting longitudinally; *ovary* superior, one-celled; *ovule* pendulous; *style* one, or none; *stigma* peltate; *drupe* fibrous, one-seeded; *seed* solitary, pendulous; *embryo* without albumen, inverted; *cotyledons* somewhat lobed, shrivelled, oily. *Trees; leaves* alternate, entire; *spikes* or *corymbs* axillary or terminal.

HERNANDIA. (Endl. Gen. Pl. 332.)

HERNANDIA OVIGERA. *American myrobalans.* East Indies. Fruit astringent.

HERNANDIA SONORA. *Jack in a box.* East and West Indies.

Fruit astringent; seeds oily, purgative. (G.) The bark, seeds, and young leaves purgative; Rumph says, that the fibrous roots, chewed and applied to wounds caused by the Macassar poison, form an effectual cure; the juice of the leaves is a powerful depilatory; it destroys hair wherever it is applied without pain. (L.) The fruit is a nut, which is very large, and as they move in the wind produce sound enough to alarm unwary travellers. (Lou.)

ORDER 132. LAURINEÆ. (De Cand. Bot. Gal. 407. Endl. Gen. Pl. 315.)

Perigone free, monosepalous, persistent, six-cleft, or six-parted, imbricated in æstivation; *stamens* inserted at the base of the segments, either six in a single row, or 9—12 in a double row; *anthers* adnate to the filaments, dehiscing from the base to the apex; *ovary* one; *style* one; *stigma* simple, or divided; *drupe* or *berry* one-celled, one-seeded; *albumen* none; *embryo* straight; *radicle* superior. *Trees* or *shrubs*, with alternate *leaves* and hermaphrodite or (by abortion) diœcious *flowers*.

Very aromatic fruits, or berries oily and odoriferous.

ACRODICLIDIUM.

ACRODICLIDIUM CAMARA. *Camara tree.* South America. The fruit, *American nutmegs, Camacou,* or *Waccawai nut-*

megs, brought by the Waccawai Indians to the coast of British Guiana, where they are much esteemed as a remedy in dysentery, diarrhœa, &c. Dr. Hancock has mentioned them as one of the most efficacious remedies in the above complaints, as well as for spasmodic pains.

AYDENDRON. (Endl. Gen. Pl. 319.)

AYDENDRON CUJUMARY. *Ocotea cujumary.* Brazil.

Seeds aromatic; their oily cotyledons are employed in powder, mixed with wine or water, in cases of indigestion. (L.)

AYDENDRON LAUREL. *Ocotea pichurim.* South America.

This plant is supposed by Humboldt to produce the *Pichurim*, or *Puchury beans*, once celebrated for their febrifugal power, and it appears that both the species here mentioned possess similar properties; by Martius they are assigned to *Nectandra puchury;* these beans were imported from Brazil into Stockholm, in the middle of the last century, and were found a valuable tonic and astringent medicine; during the continental war, they were used as a bad substitute for nutmegs; they are now obsolete. (L.)

BENZOIN. (Endl. Gen. Pl. 322.)

BENZOIN ODORIFERUM. *Laurus benzoin, L. pseudo benzoin, Fever wood, Spice berry, Spice wood.* United States.

Bark used for *Cinnamon.* (G.) Bark highly aromatic, stimulant, and tonic; given in decoction or powder in intermittents; an infusion of the twigs is vermifuge; oil of the berries, which are aromatic, a stimulant; these berries are said to have been used in the United States, during the American war, as a substitute for allspice. (G.)

CAMPHORA. (Endl. Gen. Pl. 316.)

CAMPHORA OFFICINARUM. *Cinnamomum camphora, Laurus camphora, Camphor tree.* Japan and China.

Roots yield *Camphor* by distillation. (G.) *Chinese camphor* is obtained from the wood, branches, and leaves, by dry distillation; it is a kind of *Stearoptine* remaining after the *Elæoptine* or Æthereal oil of the live tree is evaporated. (Nees.) The *Camphor* of commerce is chiefly produced in the island of Formosa, and brought by the Chinchew junks in very large quantities to Canton, whence foreign markets are supplied. (L. ex Reeves.) Camphor is a valuable stimulant, especially in typhoid fevers; in large doses narcotic; it is also much used as an external application. (O'Sh.) It has been employed in fever, inflammatory diseases, small-pox, mania and other forms of mental disorder, spasmodic affections, chronic rheumatism and gout, cholera, and in cases of poisoning by opium, &c. (Pereira.)

CARYODAPHNE. (Endl. Gen. Pl. 318.)

CARYODAPHNE DENSIFLORA. *Kiteja* or *Kitedja*. Java.

Bark brownish, tonic, containing a great quantity of bitter, somewhat balsamic, extractive matter; leaves gratefully aromatic; they are used in infusion, like tea, against spasms of the bowels, and the convulsions of pregnant women. (L. ex Blume.)

CINNAMOMUM. (Endl. Gen. Pl. 316.)

CINNAMOMUM AROMATICUM. *C. cassia, Laurus cassia, Laurus cinnamomum.* China.

According to Nees von Esenbeck, this plant furnishes the valuable *Chinese cinnamon;* the agreeable, but powerfully aromatic flavour and odour of the bark, does not, however, seem to exist also in the leaves, for they, in the stoves of Europe at least, are almost insipid, mucilaginous, and somewhat astringent, with no taste of either cinnamon or cloves. (Nees.) *Cassia bark* is supposed by some to come from this, but Mr. Marshall asserts that it is only a coarse cinnamon, obtained from the thick roots or large branches of the cinnamon tree. (L.)

" No question was ever more vexed with doubts and difficulties," says Lindley, " than that which relates to the trees producing the different kinds of cinnamon." He has followed the elaborate paper of Dr. Blume, as giving the newest as well as the most complete account of these trees, so far as he has examined them.

CINNAMOMUM CULILAWAN. *Laurus culilawan.* Amboyna.

Bark, *Culilawan, Cortex caryophylloides,* brownish-red, flat, thick, odour between clove bark and sassafras; leaves resemble those of *Raventsara;* both are healing, stimulant, and stomachic. (G.) Bark, when rubbed, aromatic like cloves, but less pungent, and sweeter when chewed, rather bitter and mucous; this is the tree that yields the true *Culilawan bark;* Pereira says, " *Culilawan bark* is an aromatic stimulant like cassia, with some astringency, and a flavour of cloves; it owes its medicinal activity to a combination of volatile oil, resin, and bitter extractive; it is useful as a carminative, and stomachic in dyspeptic complaints, especially when given in combination with the bitter tonics; it has been used in atonic gout, in old diarrhœas, &c.; the dose of it in substance is from ten grains to half a drachm; the tincture of the Wirtemburg Pharmacopœia is prepared by digesting four oz. of bark in a pint and a half of spirit; the dose is one or two fluid drachms;

the oil prepared by distillation may be used as the oils of cloves, cassia, &c.; the natives of Amboyna employ it internally in paralysis of the bladder, and externally as a stimulating liniment in contusions, paralysis, and arthritic complaints;" it appears from the investigations of Blume, that the *Culilawan bark* of the shops consists of a mixture of several Indian barks, especially those of *C. sintoc*, *Javanicum*, and *Xanthoneurum*, a confusion of no importance, as they are all alike in properties. (L.)

CINNAMOMUM JAVANICUM. *Laurus malabrathum.* Java, Borneo.

Bark a deep cinnamon-brown, more bitter than *Culilawan bark*, and the leaves, when rubbed, have a very sharp aromatic odour; Blume says this bark deserves the serious attention of medical men, on account of its powerful effects in spasmodic colic, and the after pains attending parturition. (L.)

CINNAMOMUM KIAMIS. *C. burmanni.*

Said to produce one of the sorts of *Massoy bark*, but according to Blume, that article is not furnished by any species of cinnamon. (L.)

CINNAMOMUM LOUREIRII. *Laurus cinnamomum*, *Nikei*, (Japan.) *Kio kui.* (Chinese.) Cochin China, Japan.

The *Flowers of cassia* are produced by this species; according to Loureiro, the old and young branches are equally worthless, but the middle-sized shoots furnish a bark about a line thick, of the best quality, superior to that of Ceylon, and sold at a much higher price. (L.)

CINNAMOMUM NITIDUM. *Laurus malabathrica*, *Cinnamomum eucalyptaloides.* India, Ceylon, Java.

This is the plant which furnished the principal part of the *Folia malabathri* of the old pharmacologists, a mixture of the leaves of several species of cinnamon, and once used as an aromatic substitute for cinnamon. (L.)

CINNAMOMUM RUBRUM. *Laurus caryophyllus.* Amboyna, &c.

Bark similar to that of *C. culilawan*, and hardly inferior; Loureiro says it contains much more essential oil than that of cinnamon, and smells of cloves, but is not so agreeable. (L.)

CINNAMOMUM SINTOC. Nilgherry mountains, Java.

Bark in quality very like that of the true *Culilawan*; aromatic in the same degree, but less agreeable, and with a more bitter after taste, it is also drier and more powdery when chewed; the smell, moreover, is less agreeable, not so purely that of cloves, but with a strong odour of nutmegs.

CINNAMOMUM TAMALA. *Tai*, *Tadsch*, or *Tedsch.* Continent of India.

Taste of the dried leaves warm, aromatic at first, like cinnamon, afterwards like cloves mixed with camphor; their leaves are sold under the name of " *Folia malabathri*, *Tamala pathri*, or *Indi*," in the shops, according to Nees Von Erenbeck, but Blume says he never found this in any samples he examined, although the latter are always mixed up of various species. (L.)

Cinnamomum xanthoneuron. Papuan islands and Moluccas.

A kind of *Culilawan bark* of great fragrance, clove scented, and more pungent than the true sort when fresh, but losing its quality by time; it is so extremely like *Massoy bark* as to be confounded with it, although the latter is not the produce of any cinnamon, according to Blume. (L.)

Cinnamomum zeylanicum. *Laurus cinnamomum*, *L. cassia*. Ceylon, Java.

This is the true *Ceylon cinnamon*, furnishing bark of the best quality; it varies, however, according to the season of the year in which it is collected; it is the plant usually called *Laurus cassia* in the gardens, where also it is sometimes found under the name of *Laurus cinnamomum*, and *Cinnamomum aromaticum*. The *Laurus cassia* (Linn.), the plant that produces the *Cassia lignea*, is regarded by Nees von Esenbeck as a degenerate variety of *C. zeylanicum*, palmed off upon foreigners as true cinnamon by the Dutch when they held Ceylon, and thus carried to the continent of India, where it has naturalised itself. (L)

Dicypellium. (Endl. Gen. Pl. 320.)

Dicypellium caryophyllatum. *Persea caryophyllacca*, *Licaria guianensis*, *Bois de rose*. Brazil.

Bark smelling of cloves, with a hot clove-like peppery taste, and powerful tonic properties; Nees von Esenbeck enquires whether this may not be the *Linharea aromatica*, *Canella do mato*. (L.)

Laurus. (De Cand. Bot. Gal. 407. Endl. Gen. Pl. 323.)

Laurus caustica. L. fœtens, L. globosa, L. parviflora.

Barks contain an acrid principle.

Laurus japonica.

Leaves sold for *Folium indicum*, but very different in taste.

Laurus myrrha. *L. cassia*.

Leaves bitter, narrow pointed, elliptical, sold for *Folium indicum*.

**Laurus nobilis. *Laurus*, *Bay tree*, *Sweet bay*.

Fl. yellowish. June. Small tree. Native of south of Europe.

Berries, *Lauri baccæ*, very heating and emmenagogue; yield oil by decoction or by the press; leaves, *Lauri folia*, aromatic, prepared by soaking in vinegar and drying. (G.) Leaves and fruit both aromatic; the latter enters into the composition of the *Emplastrum cumini* of the London Pharmacopœia; the fixed oil is sometimes employed externally as a stimulant. (L.) Water distilled from the leaves shows traces of prussic acid, and it is probably on this component that their medicinal and poisonous properties depend; leaves, berries, and oil, are narcotic and carminative. (Lou.) Berries, leaves, and oil, said to possess aromatic, stimulant, and narcotic properties; leaves in large doses prove emetic; leaves and berries used to strengthen the stomach, expel flatus, and to promote the catamenial discharge; the fixed oil has been used externally to relieve colic, in paralysis of the extremities, and against deafness. It is also employed in spasms and bruises. (Pereira.)

LAURUS PIPERITA. *Litsæa cubeba.*

Berries carminative.

MESPILODAPHNE. (Endl. Gen. Pl. 319.)

MESPILODAPHNE PRETIOSA. *Laurus quixos, Peruvian cinnamon, Pao,* or *Casca pretiosa.* South America.

Bark aromatic, astringent. (G.) Inner bark and rind of the calyx of a most sweet odour and agreeable taste, resembling cinnamon mixed with orange flowers, or oil of bergamot. (L.)

NECTANDRA. (Endl. Gen. Pl. 319.)

NECTANDRA CINNAMOMOIDES. *Laurus cinnamomoides, Cinnamomum sylvestre Americanum.* South America.

Bark with the flavour and smell of cinnamon, for which it is used in New Grenada (L.)

NECTANDRA CYMBARUM. *Ocotea cymbarum.* South America.

Bark aromatic, bitter, stomachic; Martius suspects that it is one of the ingredients in the famous *Woorary poison* of Guiana. (L.)

NECTANDRA PUCHURY MAJOR. *Ocotea puchury, Puchury, Pachyry.* Brazil.

Martius assigns the *Pichurim beans* to this plant; (see *Aydendron laurel;*) the fruit in the early months of the year drop from their cups to the ground, when they are collected by the natives, cleaned of their flesh and pericarp, and dried by a gentle heat; they are used in dysentery, diarrhœa, cardialgia, spasmodic colic, strangury, incontinence of urine, and other disorders; the bark has the smell of fennel mixed with cloves, according to Nees; of camphor, according to Martius; its taste is aromatic, not hot. (L.) Another species, the *N. puchury minor* of Nees, is said to yield seeds having similar qualities; its bark is described as resembling *Sassafras* when fresh, but tasteless and scentless when dry; the cotyledons smell like Balsam of Peru; it yields the *Sassafras nuts* of the London shops, according to Humboldt. (L.) *Laureaster amboynensis, Tetranthera pichurim;* seeds, *Sassafras nuts, Brazilian bean, Faba pichurim*, stomachic, astringent, anodyne, used in diarrhœa and dysentery, yield oil. (G.)

NECTANDRA RODIÆI. *Bebeeru tree, Greenheart tree, Sipeira, Bibiru.* British Guiana.

The wood, which is heavy, solid, and very permanent, is much esteemed, and fetches a higher price than most other timber. *The bark* has been brought into European notice by Mr. Rodie, as a valuable tonic in cases of intermittent fever. An alkaloid has been obtained from it by Dr. Maclagan of Edinburgh, which he calls *Beberine.*

OREODAPHNE. (Endl. Gen. Pl. 321.)

OREODAPHNE CUPULARIS. *Laurus cupularis, Bois de canelle. Isle of France cinnamon.* Isles of France, Bourbon, &c.

Bark aromatic, astringent. (G.) Wood strong scented, the cinnamon of the Isle of France. (L.)

PERSEA. (Endl. Gen. Pl. 317.)

PERSEA GRATISSIMA. *Laurus Persea, Avocado pear.* Tropical America.

Fruit yields oil. (G.) The fruit abounds in a fixed oil of a buttery substance, and is much esteemed as a dessert fruit in the West Indies; the leaves are reckoned balsamic, pectoral, and vulnerary; the seeds are very astringent. (L.)

PLEGORHIZA. (Endl. Gen. Pl. 1328. *Genera Dubiæ sedis.*)

Lindl. Nat. Syst. 526, appendix; to be added to those genera imperfectly known, and not yet referred to any natural order.)

PLEGORHIZA ASTRINGENS.

Root vulnerary, astringent.

SASSAFRAS. (Endl. Gen. Pl. 322.)

SASSAFRAS OFFICINALIS. *Laurus sassafras, Sassafras tree.* North America.

Roots, *Sassafras radix;* wood, *Cinnamon wood, Sassafras lignum*, imported from the West Indies in logs; sudorific, heating, and drying; yields essential oil. (G.) The bark of the root, which is thick and blood-red, contains a great quantity of essential oil; it has a high reputation as a powerful sudorific, and combined with *Guaiacum* and *Sarsaparilla*, in cutaneous affections, chronic rheumatism, and old syphilitic maladies; the dried leaves contain so much mucilage, that they are employed in Louisiana for thickening soup, like *Hibiscus esculentus;* the bark of the branches, as well as of the wood, have been employed, but they are inferior to the bark of the root. (L.)

SASSAFRAS PARTHENOXYLON. *Laurus parthenoxylon, L. porrecta, L. pseudo sassafras, Virgin-tree.* Java.

The fruit has a strong balsamic smell, and yields an oil considered useful in rheumatic affections; an infusion of the root is drunk as sassafras, and with similar effects. (L.)

TETRANTHERA. (Endl. Gen. Pl. 322.)

TETRANTHERA ROXBURGHII. *Litsea sebifera, Sebifera glutinosa, T. apetala.* East Indies.

Berries yield oil. (G.) The fruit yields a greasy exudation, from which the Chinese manufacture candles of bad quality, and which serves as the basis of salves; the leaves and branches are full of a glutinous matter, which is readily communicated to water in which they are bruised. (L.) The wood is the *Mueda lukree* of the Hindostanee druggists, and a favourite application to bruises and wounds. It is somewhat fragrant and slightly balsamic and sweet. (O'Sh.)

ORDER 133.—MYRISTICEÆ. (Endl. Gen. Pl. 829. Lind. Nat. Syst. 15.)

Flowers completely unisexual; *calyx* trifid, rarely quadrifid, with valvular æstivation;
flowers, male; *filaments* either separate, or completely united in a cylinder; *anthers* 3—
12, two-celled, turned outwards, and bursting longitudinally, either connate or distinct;
female; *calyx* deciduous; *ovary* superior, sessile, with a single seed, nut-like, enveloped in
a many-parted aril; *albumen* runcinate, between fatty and fleshy; *anthers* small; *coty-*
ledons foliaceous; *radicle* inferior; *plumule* conspicuous. *Tropical trees,* often yielding
a red juice, with alternate, exstipulate *leaves,* and axillary or terminal *inflorescence,* in ra-
cemes, glomerules, or panicles.

MYRISTICA. (Endl. Gen. Pl. 829.)

MYRISTICA OFFICINALIS. *M. aromatica, M. moschata, Nutmeg tree.* Moluccas.

The kernel of the fruit, *Nutmeg, Nux moschata, Myristicæ nuclei, Myristicæ moschatæ fructus nucleus;* membrane enclosing the seed, *Mace, Macis,* are stomachic, cephalic, uterine, and cordial; in an over dose, say ʒij., the nutmeg is soporific, and produces delirium; by distillation it yields an essential oil, and by expression a concrete oil. (G.) The seed is the nutmeg of the shops, the aril is the mace; they contain a volatile oil, which renders them stimulant; in small quantities they relieve flatulence, and allay colicky pains, but in large quantities they excite the circulation, and act as narcotics. (L. ex Pereira.)

MYRISTICA SEBIFERA. *Virola sebifera, Burabee, Dali.* Cayenne.

Kernels pressed for their oil. (G.) Seeds, when boiled with water, give out a large quantity of a fixed oil, used for making candles; an acrid juice also exudes from the bark, which is employed as a popular medicine. (O'Sh.)

MYRISTICA TOMENTOSA. *Male nutmeg tree.* Moluccas.

Very inferior to the true *nutmeg*, and of but little commercial value. (O'Sh.)

ORDER 134.—PROTEACEÆ. (Endl. Gen. Pl. 336. Lindl. Nat. Syst. 197.)

Calyx four-leaved, or four-cleft, with a valvular æstivation; *stamens* four, sometimes in part sterile, opposite the segments of the calyx; *ovary* simple, superior; *style* simple; *stigma* undivided; *fruit* dehiscent or indehiscent; *seed* without albumen; *embryo* with two, occasionally several, *cotyledons*, straight; *radicle* inferior. *Shrubs* or *small trees*; *branches* usually umbellate; *leaves* hard, dry, divided or undivided, opposite or alternate, without stipules, their cuticle often covered equally, or on both sides, with stomates.

GUEVINIA. (Endl. Gen. Pl. 340.)

GUEVINIA AVELLANA. *Quadria heterophylla.* South America.

Kernels esculent, very pleasant. (G.) Fruit sold like nuts in the markets of Chili, under the name of *Avellano.* (L.)

PERSOONIA. (Endl. Gen. Pl. 340.)

PERSOONIA GUAREOIDES.

Bark used for the Peruvian bark; nuts yield oil. (G.)

PERSOONIA HIRSUTA. New South Wales.

PERSOONIA LANCEOLATA. *Linkia lævis.* New South Wales.

PERSOONIA LINEARIS. New South Wales.

PERSOONIA SALICINA. *P. laurina.*

Fruits esculent.

PROTEA. (Endl. Gen. Pl. 337.)

PROTEA GRANDIFLORA.

Employed as an astringent in diarrhœa. (O'Sh.)

PROTEA MELLIFLORA.

Flowers yield a saccharine liquid, employed in diseases of the chest. Several species are also used in tanning leather. (O'Sh.)

ORDER 135.—SANTALACEÆ. (De Cand. Bot. Gall. 408. Endl. Gen. Pl. 324.)

Perigone adhering to the ovary, 4—5 cleft, somewhat coloured, æstivation valvate; *stamens* 4—5, inserted into the base of the segments of the perigone, and opposite to them; *ovary* one-celled, 2—4 seeded; *ovules* pendulous, attached to the top of the central placenta; *style* one, often lobed; *fruit* one-seeded, nucamentaceous, or drupaceous; *albumen* fleshy; *embryo* inverted, round. *Herbs* or *shrubs*, with alternate, or nearly opposite, undivided, exstipulate *leaves; flowers* small, subspicate, rarely umbellate or solitary.

MIOSCHILOS. (Endl. Gen. Pl. 327.)

MIOSCHILOS OBLONGA. Chili.

Leaves used for those of *Senna.*

OSYRIS. (De Cand. Bot. Gal. 408. Endl. Gen. Pl. 326.)

OSYRIS ALBA. *Osyris, Cassia veterum spuria, Poet's rosemary.* South Europe.

SANTALUM. (Endl. Gen. Pl. 327.)

Two species of this genus yield the *Sandal wood* of commerce, a kind of timber much esteemed for its fragrance; "it is made into musical instruments, cabinets, and curious boxes, for which it is valued, as no insect can exist, it is said, nor iron rust, within its influence; it is used in the eastern countries as an incense; *White sandal wood* is the young timber, *Yellow sandal wood* the old; it is considered by the native doctors of India as sedative and cooling; it is also used by the French apothecaries; its oil is said to be used to adulterate oil of roses. (L.) Sandal wood in powder is given by the native physicians in ardent remitting fevers, with milk it is also prescribed in gonorrhœa; rubbed on the skin it is said to allay the irritation of musquito bites, of prickly heat, and other cutaneous disorders. (O'Sh.)

SANTALUM FREYCINETIANUM. Sandwich Islands.

Said to produce sandal wood. (L.)

SANTALUM MYRTIFOLIUM. *S. album, Sirium myrtifolium, Sandal tree.* East Indies.

The outside of the wood, *White sanders, Santalum album*; the heart of the tree, *Yellow sanders, Santalum citrinum;* aromatic, slightly bitter and sweetish, cordial, cephalic. (G.) This is the shrub with which the Portuguese are reported to drive or to have driven a great trade. The *Sandal wood* of Malabar is from the same species, but is considered of better quality. (L.)

SANTALUM PANICULATUM. Owhyhee, on the volcano.

This is unquestionably the *Sandal wood* of Owhyhee, as was ascertained by the late Mr. Macrae. (L.)

Sandal tree of Tecumez, yields resin; leaves rubbed between the hands, and applied to the temples, used to take off the headache occasioned by severe drinking. (G.)

THESIUM. (De Cand. Bot. Gal. 408. Endl. Gen. Pl. 325.)
*THESIUM LINOPHYLLUM. (E. B. 247.) *Bastard toad flax.*
Fl. white. July. Perennial. Chalky pastures.
Astringent.

ORDER 136.—ELEAGNEÆ. (De Cand. Bot. Gal. 409. Endl. Gen. Pl. 333.)

Flowers diœcious, rarely hermaphrodite; *male fl.* subamentiform, with 3—4—8 *stamens; anthers* introrse, subsessile, bilocular; *female fl. perigone,* tubular, monosepalous, persistent, limb entire, or 2—4 cleft, the fauces sometimes crowned with a prominent glandular disk (except in Hippophae); *ovary* arising from the bottom of the perigone, and not united with it, one-celled, one-ovuled; *ovule* ascending, subpedicellated; *style* very short; *stigma* tongue-shaped; *fruit* crustaceous, enclosed within the pulpy perigone; *seed* erect; *albumen* fleshy, thin; *embryo* straight; *radicle* inferior; *cotyledons* flat, fleshy. *Trees* or *shrubs,* with alternate, or opposite, entire, exstipulate *leaves.*

ELÆAGNUS. (De Cand. Bot. Gal. 409. Endl. Gen. Pl. 334.)
ELÆAGNUS ANGUSTIFOLIA. *Narrow-leaved wild olive.* France.
Vermifuge.

HIPPOPHAE. (De Cand. Bot. Gal. 409. Endl. Gen. Pl. 334.)
*HIPPOPHAE RHAMNOIDES. (E. B. 425.) *Sallow thorn, Sea buckthorn.*

Fl. brown, spotted. May. Shrub. East and south-east coast.

Leaves purgative; berries made into a sauce.

ORDER 137.—ARISTOLOCHIEÆ. (De Cand. Bot. Gal. 410. Endl. Gen. Pl. 344.)

Flowers hermaphrodite; *perigone* adhering to the ovary, monosepalous, limb either three-lobed or tubular, dilated irregularly in the upper part, æstivation valvate; *stamens* definite, in ternary numbers, either free and distinct, or epigynous, adhering to the style and stigma; *ovary* 3—6 celled; *style* short; *stigma* divided; *capsule* or *berry* coriaceous, six-celled, many-seeded, placentas lateral; *embryo* small, at the base of a cartilaginous albumen. *Herbs* or *shrubs,* generally climbing, with alternate, simple, petiolated *leaves.*

The plants of this order are emmenagogue.

ARISTOLOCHIA. (De Cand. Bot. Gal. 410. Endl. Gen. Pl. 344.)
ARISTOLOCHIA ANGUICIDA. Carthagena.
The juice of the root, chewed, and introduced into the mouth of a serpent, so stupifies it, that it may for a long time be handled with impunity; if the reptile is compelled to swallow

a few drops, it perishes in convulsions; the root is also reported to be an antidote to serpent bites. (L. ex Jaquin.)

ARISTOLOCHIA BRACTEATA. Coast of Coromandel.

Every part nauseously bitter; in India, for a purging with gripes, two of the fresh leaves are rubbed up with a little water, and given to an adult for a dose, once in twenty-four hours. (Roxb.) An infusion of the dried leaves is given as an anthelmintic; fresh bruised, and mixed with castor oil, they are considered a valuable remedy in obstinate cases of itch. (L.)

*ARISTOLOCHIA CLEMATITIS. (E. B. 398.) *Birth wort, Upright birth wort.*

Fl. pale yellow. July, August. Perennial. Among ruins in the south of England.

Root emmenagogue. (G.) Roots powerfully stimulating; when fresh they have a very disagreeable smell; they have been chiefly employed as aids to difficult parturition. (L.)

ARISTOLOCHIA CYMBIFERA. *A. ringens.* South America.

Root has a very penetrating disagreeable smell, and a strong, bitter, aromatic taste; produces almost entirely the same effects as the Virginia snake root. (*A. serpentaria.*) It is very frequently used in Brazil against ulcers, paralytic affections of the extremities, dyspepsia, impotentia virilis, in nervous and intermitting fevers, especially those in which a predominant disorder of the pituitous membrane, or of the whole lymphatic system has been observed, and lastly, against the bites of serpents. According to Gomez, the powdered root is given in doses of a scruple, from four to six times a day; the decoction is ordered in doses of four to six ounces, and the juice expressed from the leaves, in doses of one or two drachms daily. (L. ex Martius.)

ARISTOLOCHIA FRAGRANTISSIMA. *Star reed.* Peruvian Andes.

Stems, when stripped of their bark, resemble cords, and are employed in Peru as ropes; the Peruvian Indians use it as a remedy for dysenteries, malignant inflammatory fevers, colds, rheumatic pains, and various diseases arising from fatigue; antiseptic, odontalgic, sudorific; flavour bitter, camphorous, balsamic; the Indians also apply it powdered, or fresh bruised, to the bites and stings of reptiles and insects, as a powerful antidote to their poison. (L. ex Ruiz.)

ARISTOLOCHIA GRANDIFLORA. Jamaica.

The whole plant emits a powerful narcotic, unpleasant smell; Swartz says it is poisonous to hogs. (L.)

ARISTOLOCHIA INDICA. East Indies.

Root nauseously bitter; the Hindoos suppose it to possess emmenagogue and antarthritic virtues. (L.)

Aristolochia longa. *Long-rooted birth wort.* South of Europe.

Aristolochia rotunda. *Round birth wort.* South of Europe.

Roots taken to ʒiss., hot, odorous, powerfully incisive. (G.)

Aristolochia bœtica. Spain.

Aristolochia pallida. Italy.

Aristolochia sempervirens. Candia.

The five foregoing species are slightly aromatic, stimulating tonics, useful in the latter stages of low fever; the taste is bitter and acrid; the odour strong and disagreeable; they are said to be sudorific, and have been employed as emmenagogues in amenorrhœa; they are supposed to be the plants with which the Egyptian jugglers stupify the snakes they play with. (L.)

Aristolochia macroura. *Jarrinha.* Brazil.

Root and herb similar in their effects to those of *A. cymbifera*, but more potent. (L.)

Aristolochia odorata. *Jamaica contrayerva.* West Indies.

Root in infusion diuretic, purgative, stomachic, and emmenagogue. (G.)

Aristolochia pistolochia. South Europe.

Root emmenagogue.

Aristolochia serpentaria. *Serpentaria Virginiana, Virginia snake root.* United States.

Root, *Serpentariæ radix*, antiseptic, heating, alexiterial, diaphoretic; given in doses of gr. x. to ʒss. of the powder, or an infusion of ʒj. every four hours, against the bites of snakes and canine madness; imported from America in bales of 200 to 500 lbs., frequently mixed with the roots of *Collinsonia præcox;* the root has a penetrating resinous smell, and a pungent bitter taste; it acts as a stimulant tonic and diaphoretic, and in certain cases as an antispasmodic and anodyne; it is peculiarly useful in supporting the strength, and in allaying the irregular action which attends great febrile debility; Dr. Chapman considers "it admirably suited to check vomiting, and to tranquillize the stomach," particularly in bilious cases.

Aristolochia trilobata. *A. trifida.* West Indies.

Reported to be an antidote to the bites of serpents; if taken in doses of from 6—20 grains, it is a sudden and powerful sudorific. (L.)

Asarum. (De Cand. Bot. Gal. 411. Endl. Gen. Pl. 344.)

*Asarum europæum. (E. B. 1083) *A. vulgare, Asarabacca.*

Fl. purplish brown. May. Perennial. North of England.

Root a drastic purge, in doses of ℈j. to ʒj.; it is also used as a sternutatory, from gr. j. to gr. iij.; leaves, *asari folia*, milder; were the usual emetic before the introduction of *ipecacuanha*, 6 to 9 leaves taken in whey; they were also applied to wounds. (G.) The powdered leaves are used to provoke sneezing; a few grains at a time may be safely used, and they produce a considerable discharge of fluid by the nostrils. (Smith.) Roots purgative, emetic, and diuretic; called *cabaret* in France, because, as it is said, drunkards use it to produce vomiting. (L.)

ASARUM CANADENSE. *Canada snake root, Wild ginger.* North America.

Root, *Asarum, P. U. S.*, mixed with those of Virginian snake root, and has the same qualities. (G.) Rhizoma agreeably aromatic, very unlike that of A. Europæum; a warm stimulant and diaphoretic, acting like *Aristolochia serpentaria:* not emetic, as has been asserted. (L.)

ASARUM VIRGINIANUM. *Serpentaria nigra, Black snake weed.* Virginia.

Roots employed as those of *A. canadense.* (G.)

ORDER 138.—EUPHORBIACIÆ. (De Cand. Bot. Gall. 491. Endl. Gen. Pl. 1107.)

Flowers monœcious, or diœcious; *perigone* monosepalous, the segments definite, sometimes more, very often increased within by various squamiform or glandular appendages: *male flower; stamens* indefinite, or generally definite, sometimes inserted into the centre of the flower, beneath the rudiments of the pistil; *anthers*, 2 celled, the cells sometimes distinct, dehiscing longitudinally on the outer side: *fem. flower; ovary*, superior, sessile, or stipitate; 2—3, or many celled, cells disposed in a circle about a central placenta; *ovules* solitary, or in pairs, suspended beneath the apex from the inner angle; *style*, as many as the cells, distinct, united, or none; *stigmas* compound, or many lobed; *capsules* of 2—3 cells; the cells bursting elastically, bivalved; *seeds* solitary, or in pairs, with an aril, annexed above to the central placenta; *embryo* surrounded by a fleshy albumen; *cotyledons* flat; *radicle* superior. *Herbs* or *shrubs* generally lactescent; *leaves* mostly alternate, stipulate, very rarely opposite; *flowers* axillary, or terminal, with bracts, or with an involucre.

The milky juice is caustic, nauseous, and purgative; embryo or corculum of the seeds usually violently emetic or purgative.

ACALYPHA. (Endl. Gen. Pl. 1111.)

ACALYPHA INDICA. *Cupameni.* East Indies.

Root bruised in hot water cathartic; decoction of leaves laxative. (L.)

ALCHORNEA. (Endl. Gen. Pl. 1113.)

ALCHORNEA LATIFOLIA. Jamaica.

Bark, *Alcornocco cabarro*, in thick, flat, long pieces, rather spongy, reddish yellow, covered with yellowish lichens; from

Jamaica; used in phthisis, ℈j. in powder, or in decoction. (G.) Nees and Ebermaier refer the *Alcornoco bark* to this plant, but it appears upon Humboldt's authority to be the produce of Bowdichia. (L.)

ANDA. (Endl. Gen. Pl. 1113.)

ANDA GOMESII. Brazil.

Bark used for intoxicating fish; seeds a safe and useful purgative, in doses of two seeds; they have the taste of hazelnuts; the Brazilians use them instead of castor-oil; the bark, roasted, passes as a certain remedy for diarrhœa brought on by cold; according to Martius, it is called *Anda-acu*, *Indayaçu*, *Purga de gentio*, *Cocca*, or *Purgados Paulistas*, *Frutta d'Arara*, in Brazil. Two or three seeds prepared as an emulsion act as a very powerful and safe purgative; they seldom excite vomiting; it has been found extremely efficacious in weakness of the lymphatic system, and particularly in general dropsy. (L.)

BRIEDELIA. (Endl. Gen. Pl. 1119.)

BRIEDELIA SPINOSA. *Cluytia spinosa.* East Indies.

Bark a powerful astringent; leaves eaten by cattle; said to destroy worms in the bowels. (L. ex Roxb.)

BUXUS. (De Cand. Bot. Gall. 411. Endl. Gen. Pl. 1123.)

*BUXUS SEMPERVIRENS. (E. B. 1431.) *Buxus*, *Common box-tree.*

Fl. straw-coloured. April. Large shrub. Dry chalky hills.

Wood sudorific. (G.) Leaves bitter and nauseous, sudorific and purgative; chips of the wood have the same properties, and have been prescribed in syphilitic diseases and chronic rheumatism; a fœtid empyreumatic oil, *Oleum buxi*, was formerly sold in the shops, but for all the purposes of box-oil, preparations of guaiacum are now employed in preference; the oil has been occasionally employed with success in the toothache; camels are poisoned by browsing on the leaves, in some parts of Persia. (L.) The timber of the box-tree is of considerable value; it is sold by weight, and being very hard and smooth, and not apt to warp, is very well adapted to a variety of nicer works; it is extensively employed by the turner, wood-engraver, carver, comb and mathematical instrument maker; and the roots by the cabinet-maker and inlayer; the English wood is esteemed inferior to that which comes from the Levant, and the American box is said to be preferable to ours for most purposes, but the English is superior for the purposes of the engraver. (Lou.)

CATURUS. (L.) (Endl. Gen. Pl. (*Acalypha*) 1111.)

CATURUS SPICIFLORUS. *Acalypha hispida.* East Indies.

Flowers said to be a specific in diarrhœa and similar disorders; boiled in water, or administered in the form of a conserve. (L.)

CICCA. (Endl. Gen. Pl. 1120.)

CICCA DISTICHA. *Phyllanthus longifolia, Cheramella.* East Indies.

Leaves sudorific; seeds cathartic; fruit subacid, cooling, and wholesome. (L.)

CICCA RACEMOSA.

Berry acid, eatable.

CLUYTIA. (Endl. Gen. Pl. 1119.)

CLUYTIA COLLINA. India.

Rind of the capsule reputed to be exceedingly poisonous. (L.)

COMMIA. (Endl. Gen. Pl. 1109.)

COMMIA COCHINCHINENSIS. Cochin China.

Yields a white tenacious juice, or gum, of an emetic, purgative, deobstruent nature; if prudently administered it is useful in obstinate dropsy and obstructions. (L. ex Lou.)

CROTON. (De Cand. Bot. Gall. 411. Endl. Gen. Pl. 1117.)

CROTON AROMATICUM. Ceylon.

CROTON BALSAMIFERUM. West Indies.

These, and some other species, are used to aromatise distilled liqueurs in the West Indies. (G.) From *C. balsamifera* is distilled a spirituous liqueur called *Eau de mantes*, used in irregular menstruation. (L.)

CROTON CAMPESTRIS. South America.

Has a purgative root, and is employed in syphilitic disorders. (L.)

CROTON CASCARILLA. West India Islands.

The bark called *Cascarilla*, a most valuable bitter, aromatic, tonic stimulant, abounding in volatile oil, is by some believed to be produced by this tree; Lindley, however, adduces evidence in opposition to the opinion of Pereira, to prove that this article is produced by *C. eleuteria*, and not by this, or by *C. pseudo-china*, as supposed by the College of Physicians; Guibourt, however, suggests that several different species may produce it, and this appears to be confirmed by the bills of entry of the Custom-house, which mention imports from places where neither of these species are supposed to exist. (*Vide* Med. Bot., p. 880.)

CROTON DRACO. Mexico.

According to Schiede, this abounds in a sanguine juice, which hardens into the finest kind of *Dragon's blood*, (*Sangre del drago* of the Mexicans,) used in Mexico as a vulnerary and astringent. (L.)

Croton eleuteria. *Cascarilla.* West Indies.

Bark, *Eleuteria bark*, *Narcaphte*, *Thymiama*, *Cortex thuris*, *Cascarillæ cortex*, imported from Eleutheria, in the Bahama Islands. This species is considered by Lindley as the true origin of the *Cascarilla bark*, as has also been affirmed by Drs. Wright and Woodville. (L.)

Cascarilla bark consists of pieces of about six or eight inches long, scarcely one-tenth of an inch thick, quilled and covered with a whitish epidermis; it has a pleasant spicy odour, and a bitter, warm, aromatic taste; it is very inflammable, and is easily distinguished from all other barks by emitting, when burned and extinguished, a fragrant smell resembling that of musk; it is a valuable carminative and tonic, and an excellent adjunct to the *Cinchona bark* in fevers.

Croton hibiscifolius. New Granada.

Has similar properties to those of *C. draco*, and like that is called *Sangre del drago*, or *Dragon's blood.* (L.)

Croton humile. Jamaica.

Used in baths for nervous weaknesses. (G.)

Croton lacciferum. *Aleurites laccifera.* Ceylon.

Yields *Ceylon lac.* (G.) Bark of the root aromatic and purgative; the branches yield very fine lac in grains, in small quantities. (L.)

Croton lineare. West Indies.

A specific in cholic. (G.)

Croton moluccanum. Ceylon.

Seeds, having the corculum taken out, esculent. (G.)

Croton pavana. East Indies.

This is supposed to have been the original *Tilly seed* plant. (L.)

Croton perdicipes. South America.

Employed in Brazil as a cure for syphilis, and as a useful diuretic.

Croton polyandrum. *Jatropha montana.* East Indies.

Seeds reckoned by the Hindoos a good purgative; one seed, bruised in water, administered for each evacuation. (L. ex Roxb.)

Croton pseudo-china. *C. cascarilla.* Mexico.

A very distinct species from *C. eleuteria*, and according to Deppe, beyond all doubt the true *Quina blanca*, or *Copalchi*, of the druggists of Xalapa, and in his opinion, probably the plant yielding the *Cascarilla* of Europe; Professor Don considered it quite certain that this plant produces the *Cascarilla bark* of the English market, but although it is extremely like true *Cascarilla*, it is certainly not the same, as Dr. Pereira has traced the importation of this bark, and shown that it resembles *Ash cinchona bark* in appearance, and is very different in many respects from the officinal *Cascarilla* of this country. There is also another bark, called *Copalchi* in Mexico, which, according to Virey and Guibourt, is furnished by *Strychnos pseudo quina*. (L.)

CROTON SANGUIFLUUS. New Andalusia.

Has similar properties to those of *C. draco*, and is called by the same name (*Sangre del drago.*) (L.)

CROTON SUBEROSUM. Acapulco.

Employed in Peru as an aromatic purgative. (L.)

CROTON TIGLIUM. *C. jalmagota.* India, Ceylon.

Seeds, *Molucca grains, Purging nuts, Grana tiglia*, gr. ss., with catechu gr. j., very hydragogue, emetic, emmenagogue, corrected by acids, or roasting; yield oil; wood *Lignum pavanæ* has the same qualities, but weaker, sudorific in a small dose. (G.) This is one of the plants from which the violently drastic substance called *Croton oil*, or *Oil of Tiglium*, is prepared; the seeds are the part used; Dr. Hamilton has indeed shown that the original *Grana dilla*, or *Oil of tilli*, or *Grana tiglia*, were produced in all probability by a different species, *C. pavana*, but this is the plant of Roxburgh, and it is certain that it is the *C. tiglium* of Ceylon. (L.) Croton oil is one of the most violent cathartics we possess. It is an invaluable remedy in apoplexy and similar disorders, where immediate cathartic action is requisite and the swallowing of bulky medicines impracticable; applied externally to the skin, it causes an eruption of very painful pustules, like those caused by tartar emetic ointment.

CROZOPHORA. (Endl. Gen. Pl. 1117.)

CROZOPHORA TINCTORIA. *Cascarilla tinctorium, Croton tinctorium, Heliotropium, Turnsol.* South of Europe.

Juice blue, easily changed to red by acids, and green by alkalies; used to dye rags and paper. (G.) An acrid plant, with emetic, drastic, corrosive properties; its seeds, ground into powder and mixed with oil, are employed as a cathartic medicine; it is cultivated for the deep purple dye, called *Turnsoll*, which is obtained from it. (L.) Employed to dye silk and wool of an elegant blue colour, and the juice is used to colour wines and jellies; the substance for this purpose is called *Turnsol*, and is made of the juice which is lodged between the calyx and the seeds; this, if rubbed on cloths, appears at first of a lively green, but soon changes to a blueish purple; if these cloths are put into water, and afterwards wrung, they will dye the water of a claret colour; the rags thus dyed are brought to England, and sold in the druggists' shops by the name of *Turnsol.* (Lou.)

ELÆOCOCCA. (Endl. Gen. Pl. 1114.)

ELÆOCOCCA MONTANA. *Vernicia montana.* Tropical Asia. Kernels yield oil.

EMBLICA.

EMBLICA OFFICINALIS. *Phylanthus emblica, Myrobalanus emblica, Nilicamaram.* India.

Fruit, *Myrobalanus emblica,* purgative, acidulous, rather austere; when pickled, excites the appetite; root astringent, used in dyeing. (G.) Fruit extremely acid and astringent, when dry a mild purgative; bark used in India in diarrhœa. (L.) Also for tanning leather. (O'Sh.)

EUPHORBIA. (De Cand. Bot. Gall. 411. Endl. Gen. Pl. 1108.)

*EUPHORBIA AMYGDALOIDES. (E. B. 2255.) *Tithymalus sylvaticus, T. sylvaticus lunato flore, Evergreen wood spurge, Wood spurge.*

Fl. yellow. March, April. Perennial. Woods and thickets.

Emetic.

EUPHORBIA ANTIQUORUM. *Triangular spurge.* East Indies. Yields *Gum euphorbium;* cathartic. (G.) Supposed by some to yield the drug *Euphorbium,* a resinous substance, possessing acrid, irritant, poisonous properties; in all probability, however, it is obtained from *E. officinarum;* Dr. Christison assigns the substance to the latter, Guibourt to this species, *Officinarum* and *Canariensis;* according to Hamilton and Royle, no euphorbium is obtained from this, at least in India. (L.) One of the species furnishing the *Euphorbium* of the Materia Medica. (Lou.) No euphorbium resin is obtained from this species in India. (O'Sh.)

EUPHORBIA APIOS. *Apios, Knobbed-rooted spurge.* Candia. Caustic.

EUPHORBIA CANARIENSIS. Canary Islands.

Yields *Gum euphorbium.* (G.) Properties the same as those of *E. officinarum,* but weaker; Martius regards this as the source of *Euphorbium,* but Dr. Pereira says that he is certainly in error, as all our *Euphorbium* comes from Mogador. (L.) One of the plants furnishing the *Euphorbium* of the Materia Medica. (Lou.)

EUPHORBIA CANESCENS.

Antisyphilitic, useful in venomous bites.

EUPHORBIA CHAMÆSYCE. *Chamæsyce, Thyme spurge.* South of Europe.

*EUPHORBIA CHARACIAS. (E. B. 442.) *Tithymalus characias, Red shrubby spurge, Wood spurge.*

Fl. yellowish. March, April. Large shrub. Needwood Forest, Staffordshire.

Both violently cathartic.

EUPHORBIA COROLLATA. *Large-flowered spurge.* North America.

Root emetic, mixed with true *Ipecacuanha*, and used for it. (G.) A good emetic, in the opinion of Dr. Zollickoffer of Baltimore, not inferior to *ipecacuanha;* it is also expectorant and cathartic; the bruised root, when recent, excites inflammation and vesication. (L.)

*EUPHORBIA CYPARISSIAS. (E. B. 840.) *Cypress spurge.*

Fl. yellowish. June, July. Perennial. Groves and thickets.

Juice may be used for *Scammony*, is also emetic. (G.) A virulent poison; a woman is said to have died in half-an-hour after taking a dose of the root, and in other cases the skin of the face has peeled off in consequence of its use; nevertheless the powder of the root, in doses of 6—20 grains, or even from a scruple to a drachm, has been given without any bad consequences. (L.)

EUPHORBIA DENDROIDES. *Tithymalus dendroides, Tree spurge.* Italy.

Violently cathartic.

EUPHORBIA EDULIS. Cochin China.

A kitchen herb. (G.) Said to be used as a pot-herb in Cochin China. (Lou.)

*EUPHORBIA ESULA. (E. B. 1399.) *Leafy-branched spurge.*

Fl. yellowish. July. Perennial. Sussex, and near Edinburgh.

A dangerous poison; a woman is stated by Scopole to have died half-an-hour after swallowing thirty grains of the root. (L.)

EUPHORBIA FALCATA. Middle and South of Europe.

The herb, dried and salted, was preserved by the ancient Greeks as a powerful purge. (L.)

EUPHORBIA GERARDIANA. *E. cajogala, E. glaucescens, E. linariæfolia.* Middle of Germany and Hungary.

Root emetic, mixed with true *Ipecacuanha*, and used for it. (G.) Bark of the root cathartic and emetic; it is said by Loiseleur Deslongchamps to be the best of the European Euphorbias, and to vomit easily in doses of 18—20 grains. (L.)

*EUPHORBIA HELIOSCOPIA. (E. B. 883.) *Sun spurge, Wart wort.*

Fl. yellowish. July, August. Annual. Waste and cultivated ground.

Juice applied to warts. (G.) The juice of every kind of spurge is so acrid, that it corrodes and ulcerates the body wherever it is applied; hence it is dropped on warts and corns to remove them, and in the hollow of a decayed tooth, to remove the pain, by destroying the nerve, or it is rubbed behind the ears, to give relief in the toothache, by blistering. (Lou.)

Euphorbia heptagona. Cape of Good Hope.

Juice used to poison weapons. (G.) Virey says, the Æthiopians tip their arrows with the milk, which is mortal poison. (L.)

Euphorbia hirta. *Creeping hairy spurge*, *Caiaca.*

Dried plant, ʒj., purgative, used in dry bellyache. (G.)

Euphorbia ipecacuanha. *Ipecacuanha spurge.* North America.

Root emetic, mixed with true *Ipecacuanha*, and used for it. (G.)

Root acts powerfully as an emetic; in doses of from ten to twenty grains, it is both an emetic and cathartic; it is more active than *Ipecacuanha* in proportion to the number of grains administered; it wants, however, the peculiar mildness of that drug. (L.)

*Euphorbia lathyris, (E. B. 2255.) *Catapuntia minor*, *Lathyris*, *Caper spurge*, *Garden spurge.*

Fl. yellowish. June, July. Biennial. Thickets and woods.

Seeds, No. 12 or 14, purge and vomit violently, useful in dropsy; as they yield a fine oil, have been proposed for cultivation for that purpose; the oil purgative in doses of five or six drops; leaves inebriate fish; milk corrodes warts; decoction depilatory. (G.) This plant, the *Catapuntia minor* of old Pharmacopœias, has drastic seeds; country labourers are said to take one as a purge, and women several to procure abortion; bark of the root and stems, reduced to powder, are cathartic and emetic; it was one of the plants directed by Charlemagne, in his capitularies, to be grown in every garden; no doubt as the most ready purge then to be procured. (L.)

Euphorbia ligularia. East Indies.

Root, mixed with black pepper, used in India as a cure for the bites of snakes. (O'Sh.)

Euphorbia linearis. Brazil.

Called *Erva do andourinha*; milky juice employed for syphilitic ulcers; Martius says it is singular that there is a notion throughout Brazil, that this juice, dropped into a fresh wound in the apple of the eye, immediately effects a cure; it is said this experiment has often been tried with success upon fowls. (L.)

Euphorbia myrsinitis. *Tithymalus myrsinites*, *Myrtle spurge.* South of Europe.

Violently cathartic.

EUPHORBIA NEREIFOLIA. India.

Juice of the leaves prescribed by the native Indian practitioners internally as a purge and deobstruent, and externally mixed with margosa oil in such cases of contracted limbs as are induced by ill-treated rheumatic affections; the leaves are no doubt diuretic. (L. ex Ainslie.)

EUPHORBIA OFFICINARUM. Arabia and Africa.

Yields *gum euphorbium*, cathartic. (G.) Milk purgative, seven or eight drops mixed with flour are made into pills, or taken in cow's milk as a dose, according to Forskahl. Dr. Pereira is of opinion, that the *Dergrause* of Mr. Jackson, from which, according to the latter author, *Mogadore euphorbium* is obtained, is a species nearly related to this. (L.) *E. officinarum*, and also *Antiquorum* and *Canariensis*, furnish the *Euphorbium* of the Materia Medica. In the lower regions of Mount Atlas, the inhabitants collect the concreted resin, which they call *Furbiune*, in September; it is obtained by making slight incisions in the branches of the plant with a knife, from which a milk-like juice exudes, and forms into tears, of an oblong or roundish form; the quantity yielded is so considerable, that the plants are cut once only in four years, the supply then obtained being sufficient for that space of time for all Europe; the recent juice is so corrosive as to erode the skin wherever it touches; when dried it is inodorous, and when chewed has little taste, but it soon gives a very acrid burning impression to the tongue, palate, and throat, which is very permanent, and almost insupportable; it possesses powerful cathartic, emetic, errhine, and rubefacient properties; it has been given as a hydragogue in dropsies, but owing to the violence of its effects, its internal use is now exploded; neither as an errhine can it be used alone, for it occasions so much inflammation as to produce hæmorrhage from the nostrils, and swells the integuments of the head; when properly diluted, however, with starch, or any other inert powder, and cautiously used, it is an effectual and excellent errhine in lethargy, deafness, palsy, amaurosis, and similar cases. (Thomson's London Dispensatory.)

EUPHORBIA OPHTHALMICA.

Used in blindness.

EUPHORBIA PALUSTRIS. *Esula major*, *Great spurge*. Sweden.

Cathartic.

*EUPHORBIA PARALIAS. (E. B. 195.) *Tithymalus paralias*, *Sea spurge*.

Fl. yellowish. August, September. Perennial. Sandy sea coasts, south of England.

Used as a purgative, and for the other uses of spurge. (G.)

*EUPHORBIA PEPLIS. (E. B. 2002.) *Reveillematin*, *Purple sea spurge*. πεπλις. (Dioscorides.)

Fl. yellowish. July, September. Annual. Sea-coasts of Devon and Cornwall.

Purgative, milk acrid; the eyelids, being touched with it, itch so as to hinder sleep. (G.) Properties the same as in *E. falcata*. (L.)

*EUPHORBIA PEPLUS. (E. B. 959.) *Peplus, Petty spurge.*

Fl. yellow. July, August. Annual. Cultivated and waste ground.

Violently cathartic. (G.) Properties like *E. falcata*. (L.)

EUPHORBIA PILULIFERA. East Indies.

Antisyphilitic, useful in venomous bites. (G.)

EUPHORBIA PISCATORIA. Canary Islands.

*EUPHORBIA PLATYPHYLLA. (E. B. 387.) *Broad-leaved, warted spurge.*

Fl. yellowish. July, August. Annual. Corn-fields.

Used to inebriate fish. (G.)

EUPHORBIA PITHYUSA. *Esula minor, Lesser spurge.* South of Europe.

Milk purgative, corrected by acids. (G.)

EUPHORBIA SEGETALIS. *Tithymalus, Amygdaloides angustifolius, Narrow-leaved wood spurge.* South of Europe.

Employed as a purgative, and for the other uses of spurge. (G.)

EUPHORBIA THYMIFOLIA. East Indies.

Juice, made into paste with wheat flour, and formed into pills, is a violent purgative in doses of five pills; the fresh plant, bruised, is applied to wounds among the Arabs. (Forsk.) Leaves and seeds given by the Tamool doctors of India, in worm cases, and certain bowel affections of children. (L.)

EUPHORBIA TIRUCALLI. East Indies.

Cathartic, emetic, antisyphilitic; exhalations affect the eyes. (G.) Milk introduced into the eye produces severe inflammation and even blindness; according to Sonerat, the milk, mixed with flour, is taken in India in doses of a drachm a day, as a remedy for syphilis, and successfully, in cases that are not inveterate; the same milk, thickened by boiling, has been used as a cathartic and emetic, but its action is so violent as to render its use very dangerous. (L.)

EUPHORBIA TRIBULOIDES. Canary Islands.

Said to be a sudorific. (L.)

EUPHORBIA VERRUCOSA. *Rough-fruited spurge, Warted spurge.* France.

Violently cathartic.

EXCŒCARIA. (Endl. Gen. Pl. 1108.)

EXCŒCARIA AGALLOCHA. East Indies.

Trunk abounding in a most dangerous, virulent, acrid milk;

woodcutters, upon whom this juice has flown after a stroke of their axe, reported to Roxburgh, that it produced inflammation and ulceration; Rumph states, that the Dutch sailors, who were sent ashore in Amboyna to cut timber, sometimes became furiously mad, from the pain produced by the juice that fell on their eyes, and that some of them altogether lost their sight; *Agallochum*, or *Aloes-wood*, is not produced by this tree, but by *Aquilaria agallochum.* (L.)

FICARIUM.

FICARIUM COCHINCHINENSE.
Fruit edible. (G.)

HEVEA. (Endl. Gen. Pl. (*Siphonia*) 1113.)

HEVEA GUIANENSIS. *Jatropha elastica*, *Siphonia cahuchu*, *Elastic gum-tree.* Woods of Guayana.

Yields, by incision, *elastic gum.* (G.) This plant produces the Demerara and Surinam *Caoutchouc*, which is imported in bottles and other forms. (L.)

HIPPOMANE. (Endl. Gen. Pl. 1110.)

HIPPOMANE BIGLANDULOSA.
Yields bird-lime.

HIPPOMANE MANCINELLA. *Manchineel.* West Indies.

Fruit beautiful, but so caustic as to corrode the mouth and occasion vomiting; juice of the tree used to poison weapons. (G.) The whole tree abounds in a white, caustic, venomous juice; a drop of it, on the back of the hand, produces instantaneously, like a fire, a blister; all the other parts are acrid in a similar manner; it is uncertain whether sleeping in its shade is so dangerous as popular rumour represents. Jacquin doubts if the stories of the land crabs, fed on the fruit, becoming poisonous can be true. (L.) It is a common belief that to sleep beneath the branches is death, but Jacquin and his companions reposed under it for three hours at a time without inconvenience; the wood is a most beautiful material for furniture, being finely variegated with brown and white, and susceptible of a high polish; the workmen who fell the trees first kindle a fire around them, by which means the juice becomes so much inspissated as not to follow the blows of their axes. (Lou.)

HURA. (Endl. Gen. Pl. 1110.)

HURA CREPITANS. *Sand-box.* Tropical America.

Milk so venomous as to produce blindness a few days after touching the eye; seeds a violent, drastic, dangerous purgative; Aublet states that negro slaves, to whom one or two seeds had been administered, in the form of an emulsion, were almost killed by them; Martius reckons the plant an emetic. (L.)

HYÆNANCHE. (Endl. Gen. Pl. 1124.)

HYÆNANCHE GLOBOSA. *Jatropha globosa, Toxicodendron capense, Hyæna poison.* Cape of Good Hope.

Fruit in powder used to poison hyænas. (G.)

JANIPHA. (Endl. Gen. Pl. (*Manihot*) 1115.)

JANIPHA MANIHOT. *Jatropha manihot, Manihot utilissima, Bitter cassava.* Brazil.

Root full of an acrid, poisonous, milky juice, separable by expression, or corrected by roasting, thus yielding a nutritive farina; also by boiling the juice, which is used as a sauce, and made into soy. (G.) Expressed juice dangerously poisonous; fecula of the root harmless when separated from the juice, and exposed to heat, becoming *Cassava*, a principal article of diet in South America; the nutritious substance called *Tapioca* is the *Cassava* differently prepared and granulated; these preparations are obtained by crushing the roots after the bark has been removed, and straining off the water, when the mass is gradually dried in pans over the fire. (L.) *Tapioca* and *Moussache* are the fecula of the root of this plant. The juice of this root deposits a white fecula, which after being well washed and dried constitutes what is called *Moussache.* This is formed of rounded grains having a central dark point, and of remarkably equal size. When the moussache is dried on hot plates, the grains partly burst and the fecula agglomerates in irregular, semi-opaque, gumlike masses, and is then called *Tapioca.* This is both highly nutritious and easy of digestion, forming an excellent article of food for the sick and convalescent. *Cassava bread* is made of the tapioca root from which the acrid juice and fecula have been removed by washing; the juice of the root is a very formidable poison. (O'Sh.)

JATROPHA. (Endl. Gen. Pl. 1114.)

JATROPHA CURCAS. *Barbadoes nut-tree, Physic nut.* South America, East Indies, Africa.

Seeds, *Common physic nut*, very violently purgative and emetic, No. 2 or 3, carefully peeled; yield an oil; shrub yields on incision a lactescent and caustic juice, which dyes linen black; leaves rubefacient. (G.) The leaves rubefacient and discutient; warmed and rubbed with castor oil, are applied by the natives of India to inflammations when suppuration is wished for; seeds are violently emetic and drastic; their expressed oil reckoned a good external application in itch and herpes; it is also used, a little diluted, in chronic rheumatism; milky juice reckoned detergent and healing, it dyes linen black; the oil, boiled with oxyde of iron, forms a varnish, used by the Chinese for covering boxes; in large doses the seeds are energetic poisons; according to Martius, this produces in

Brazil the *Pinhôes de purga*, one of the strongest known drastics; in a fresh state one seed is sufficient for a dose. (L.)

JATROPHA GLANDULIFERA. East Indies.

The pale or whey-coloured, thin juice, which exudes from a fresh wound, is employed by the Hindoos as an escharotic, to remove films from the eyes. (L. ex Roxb.)

JATROPHA GLAUCA. *Croton lobatum.* Arabia Felix.

Seeds pressed for their oil. (G.) Seeds yield a stimulating oil, recommended by the Hindoos as an external application in cases of chronic rheumatism and paralytic affections. (L. ex Ainslie.)

JATROPHA GOSSIPIFOLIA. *Wild cassada.* West Indies.

Young leaves, No. 6, boiled as greens, a powerful purge; No. 15—20, in decoction, with some castor oil, used as a clyster in dry bellyache; the powder of the gland contained in the stem is an errhine. (G.) Seeds much relished by, and very nourishing to, poultry. (Lou.)

JATROPHA MULTIFIDA. *French physic nut.* Tropical America.

Seed *Avellana purgatrix*, No. 1, a violent purge. The seeds are one of the best of all emetics and purgatives, acting briskly, but without inconvenience; their effects are readily stayed by the administration of a glass of good white wine. (Lou.)

MERCURIALIS. (De Cand. Bot. Gall. 417. Endl. Gen. Pl. 1111.)

*MERCURIALIS ANNUA. (E. B. 559.) *M. mas et fœmina, Annual mercury, French mercury.*

Fl. green. August. Annual. Waste places and cultivated grounds.

Herb detersive, purgative, resolvent, and emmenagogue. (G.)

*MERCURIALIS PERENNIS. (E. B. 1872.) *Cynocrambe, Perennial* or *Dog's mercury.*

Fl. greenish. April, May. Perennial. Hedges and thickets.

Herb used instead of *M. annua*, but has produced fatal accidents. (G.) Very poisonous, though, as appears from the accounts of ancient writers, it may be eaten boiled as a pot-herb, if mixed with mucilaginous plants and oily substances; instances are, however, recorded, of the fatal consequences of its use occasionally in this country. (Smith.) According to Sloane, it has sometimes produced violent vomiting, incessant diarrhœa, a burning heat in the head, a deep and long stupor, convulsions, and even death. (L.) *M. annua* possesses similar qualities, though supposed to be rather less virulent. (Smith.)

MERCURIALIS TOMENTOSA. *Phyllon, Children's mercury.* Spain.

Herb used by the Moors in female diseases, decoction recommended in hydrophobia. (G.)

OMPHALEA.

OMPHALEA TRIANDRA. Tropical America.

Nuts exceedingly delicious and wholesome. (L.)

PEDILANTHUS. (Endl. Gen. Pl. 1108.)

PEDILANTHUS TITHYMALOIDES. *Euphorbia tithymaloides, E. myrtifolia, Jew bush.* West Indies.

The practitioners of Curaçao give a decoction of the whole plant, especially of the stem, as the ordinary beverage; and in arbitrary doses, to patients with venereal complaints. The American women also employ it in suppression of the menses; the plant is moreover known and used as *Ipecacuanha.* (L.)

PHYLLANTHUS. (Endl. Gen. Pl. 1120.)

PHYLLANTHUS NIRURI. East Indies.

Febrifuge, diuretic, astringent. (G.) Root bitter and astringent; when fresh, employed successfully in jaundice; half an ounce, rubbed in milk, and given night and morning, completed a cure, according to Dr. John, in a few days without any sensible operation of the medicine. (Roxb.) Root, leaves and young shoots deobstruent, diuretic, and healing; leaves very bitter, and a good stomachic. (Ainslie.) A decoction of the bruised herbage and seed a specific against diabetes, according to Martius, who says it is called *Erva pombinha* in Brazil. (L.)

PHYLLANTHUS SIMPLEX. East Indies.

Fresh leaves, flowers, and fruit, mixed with equal parts of *Cumin seeds* and sugar, and made into an electuary, are administered by the natives of India in doses of a tea-spoonful a day, in cases of gonorrhœa; fresh leaves, bruised and mixed with butter-milk, make a wash to cure the itch in children. (Roxb.)

PHYLLANTHUS URINARIA. *Tsjeru kirganeli.* India.

A powerful diuretic. (L.) Febrifuge, astringent. (G.)

PHYLLANTHUS VIROSUS. India.

Bark astringent, deleterious to fish. (G.) Bark a strong astringent, intoxicating fish when thrown into water. (L.)

RICINUS. (De Cand. Bot. Gall. 411. Endl. Gen. Pl. 1115.)

RICINUS COMMUNIS. *R. C. minor, Oil bush, Palma christi.* India.

Seeds, *Mexico seeds, Castor seeds, Ricini semina,* purgative; yield oil by boiling or expression; root in decoction diuretic; leaves with lard used externally, as an emollient poultice. (G.)

The seeds of this plant yield by expression the well-known valuable cathartic substance called *Castor oil.*

RICINUS VIRIDIS. *R. communis major*, a variety of the above.

Seeds, *Lamp-oil seeds*, yield oil.

Castor oil is used to evacuate the contents of the bowels in all cases where we are particularly desirous of avoiding the production of abdominal irritation, especially of the bowels and the urino-genital organs; it is employed in inflammatory affections of the alimentary canal; in obstructions and spasmodic affections of the bowels, after surgical operations about the pelvis or abdomen, as well as after parturition; in inflammatory or spasmodic diseases of the urino-genital organs; in affections of the rectum; as a purgative for children, and in habitual costiveness; it has also been employed as an anthelmintic for tapeworms, but it does not appear to possess any peculiar or specific vermifuge properties. The dose for children is one or two teaspoonfuls; for adults, from one to two or three table-spoonfuls. (Pereira.)

ROTTLERA. (Endl. Gen. Pl. 1116.)

ROTTLERA TINCTORIA. *Poonag.* East Indies.

The outside of the capsules yield a yellow dye, *Wassunta gunda.* (G.) Capsules the size of a small cherry, clothed with abundance of deep red granular powder, easily rubbed off; this powder is a valuable article of commerce, being much employed by the Moors for dyeing silk of a deep, bright, very beautiful and durable full orange colour; it is used in the following manner: to four parts of *Wassunta gunda* are added one of alum and two of salt of soda, (native barilla;) these are rubbed well together, with a portion of expressed oil of sessamum, so small as hardly to be perceived; when well mixed, the whole is put into boiling water, in quantities proportioned to the silk which is to be dyed, and kept boiling smartly more or less time according to the shade required; the silk is turned frequently to render the shade uniform. (Lou.)

SAPIUM. (Endl. Gen. Pl. (*Stillingia*) 1110.)

SAPIUM AUCUPARIUM. *Hippomane biglandulosa.* Carthagena.

Yields birdlime. (G.) The inspissated juice furnishes a kind of birdlime, which is venomous; the vapours from this juice are highly dangerous, producing erysipelatous inflammation. (L.)

SAPIUM INDICUM. Delta of the Ganges.

Juice highly poisonous; seeds used for intoxicating fish. (L.)

STILLINGIA. (Endl. Gen. Pl. 1110.)

STILLINGIA SEBIFERA. *Cascarilla sebiferum*, *Sapium sebiferum*, *Tallow-tree.* China.

Seeds yield tallow. (G.) An oil is expressed from the kernel, which hardens by cold to the consistence of common tallow, and by boiling becomes as hard as bees'-wax. (Lou.) Seeds covered with a waxy substance, used in China for making candles. (O'Sh.)

STILLINGIA SYLVATICA. Carolina.

Considered a specific in cases of syphilis. (Lou.)

TRAGIA. (Endl. Gen. Pl. 1111.)

TRAGIA INVOLUCRATA. India.

Roots, according to the Hindoo doctors, useful in altering and correcting the habit in cachexia, and old venereal complaints attended with anomalous symptoms. (L. ex Ainslie.) Hairs sting violently. (O'Sh.)

ORDER 139. URTICEÆ. (De Cand. Bot. Gall. 417. Endl. Gen. Pl. 282.)

Flowers small, greenish, monœcious, or diœcious, solitary, or surrounded by a monosepalous involucrum; *perigone* monosepalous, 3—5 lobed, persistent. *Male flower.* *Stamens* definite, inserted into the base of the perigone. *Fem. flower. Ovary* simple, free; *styles* 2 or 1, bifurcate; *fruit* an achene or drupe, covered by the persistent perigone, solitary, or inserted into the dilated fleshy receptacle; *seed* pendulous, albuminous, or exalbuminous; *embryo* straight, curved, or spiral; *radicle* generally superior. *Herbs* or *trees* usually with hispid and spathulate *leaves*; *flowers* capitate or racemose.

ANTIARIS. (Endl. Gen. Pl. (*Artocarpeæ.*) 280.)

ANTIARIS TOXICARIA. *Ipo toxicaria.* Java, Baly, and Celebes.

Milky juice, *Upas antiar*, used to poison instruments. (G.) One of the most virulent of known poisons. Some persons are exposed to danger when they only approach the trees; Leschenault de la Tour sent a man up into a tree, he became very ill, his body swelled, and for several days he suffered severely by vertigo, nausea, and vomiting; others experience no inconvenience from the exhalations of the tree; Blume considers it to act chiefly upon the vascular system, and states, that it acts differently upon different animals; thus it destroys apes, cats, bats, and some kinds of birds, more rapidly than dogs or the more robust mammalia, while fowls, &c., are little affected by it, and either recover, or die after a much longer time than any of the above mentioned animals, even mammalia; notwithstanding its virulence, the concrete juice has been used medicinally, but even in minute doses it produces violent vomiting and purging, and seems to be too dangerous to be employed except with extreme caution. (L.)

ARTOCARPUS. (Endl. Gen. Pl. (*Artocarpeæ*) 281. Lindl. Nat. Syst. 178.)

ARTOCARPUS BENGALHENSIS. *Wontay.*

Fruit preserved in salt, used in cookery instead of tamarinds.

ARTOCARPUS INCISA. *Bread fruit tree.* South Sea Islands.

Fruit, *Bread fruit*, *Meat fruit*, when unripe, contains a farinaceous pulp; before the seeds fill, the fruit is very pulpy and pleasant. (G.) The fruit is about the size and shape of a child's head; it is covered with a thin skin, and has a core about the size of the handle of a small knife; the eatable part lies between the skin and the core, it is as white as snow, and somewhat of the consistence of new bread; it must be roasted before it is eaten, being first divided into three or four parts. Besides this use of the fruit, the economical purposes to which the other parts of the tree are applied are various; the wood is used in building boats and houses; a cloth is made of the inner bark; the male catkins serve for tinder, the leaves for wrapping up food, and for wiping the hands instead of towels; and the juice for making birdlime, and a cement for filling up the cracks of vessels for holding water. (Lou.)

ARTOCARPUS INTEGRIFOLIA. *A.jaca*, *Jack-tree.* India.

Fruit eatable, juice yielded by incision elastic like Indian rubber; bark said to make Chinese rice-paper, used for flower painting; others ascribe this paper to *Nelumbium speciosum.* (G.)

BAGASSA. (Endl. Gen. Pl. (*Artocarpeæ*) 282. Lindl. Nat. Syst. 178.)

BAGASSA.

Tree lactescent; fruit eatable. (G.)

BÖHMERIA. (Endl. Gen. Pl. 284.)

BÖHMERIA CAUDATA. Woods of Jamaica and Brazil.

Called *Asapeixe* in Brazil, according to Von Martius, who states, that a decoction of its leaves in baths is prescribed in hemorrhoidal complaints, and is said to produce extraordinary effects. In the northern parts of Brazil, where this plant does not grow, they use instead of it several kinds of Böhmeria and of Urtica. (L. ex Martius.)

CANNABIS. (De Cand. Bot. Gal. 417. Endl. Gen. Pl. (*Cannabineæ*) 286.)

**CANNABIS SATIVA. *C. Indica*, *Cannabis*, *Gunga*, *Hemp.*

Fl. greenish. July, August. Annual. Native of India.

Juice made into an agreeable inebriating drink; seeds oily, cooling, antiphrodisiac, pectoral, aperitive, but inebriating, and producing fatuity; leaves used as tobacco; *Churrus*, the resinous extract obtained from the plant when in fruit. (G.) A very powerful stimulating narcotic, much used in some countries as an intoxicating drug; under the names of *Banga*, *Bang*, or *Gunga*, in India, of *Kinnab*, (the root of the word *cannabis*,) or *Hashish*, in Arabia, *Malach* among the Turks, *Ducha* with the Hottentots, the dried leaves are universally employed either mixed with tobacco for smoking, or in the form of powder, which is swallowed in some fluid; the male flowers are employed in the same manner; in Nepal, a narcotic gum resin called *Churrus* is supposed to be obtained from hemp. The best of all cordage is manufactured from the tough woody tissue of the stems; hemp seed is nutritious, and not narcotic; it has the very singular property of changing the plumage of bullfinches and goldfinches, from red and yellow to black, if they are fed on it for too long a time, or in too large a quantity. (Burnett.) For an interesting account of the effects of the administration of hemp resin in various complaints, &c., see O'Sh. Bengal Dispensatory, p. 579, et seq.

DORSTENIA. (Endl. Gen. Pl. (*Moreæ*) 278.)

DORSTENIA BRAZILIENSIS. *D. cordifolia*, *D. tubicina Caapia.* Jamaica, Brazil, Trinidad.

Root diaphoretic, sold as *Contrayerva.* (G.) The tuberous root is used like *Serpentaria* against nervous fevers and general debility, as well as against the bite of serpents, and when quite fresh, is said to operate more powerfully than that, but to lose its virtue more speedily; sometimes also it serves as a gentle emetic; this plant is frequently confounded with other species of Dorstenia, all which, however, are inferior to it in salutary virtue. (L. ex Martius.)

DORSTENIA CONTRAYERVA. *Contrayerva drakena*, *Lisbon contrayerva.* New Spain, West Indies.

Root, *Contrayervæ radix*, imported from the West Indies in pieces about two inches long, packed in bales; when fresh, acrid; when dry, aromatic, stimulant, antiseptic, diaphoretic.

DORSTENIA DRAKENA. High grounds near Vera Cruz.

DORSTENIA HOUSTONI. Campeachy.

Roots diaphoretic, sold as *Contrayerva.* (G.) Under the name of *Contrayerba*, or *Contrayerva*, there is imported from the West Indies an officinal root, which has stimulant, sudorific, and tonic qualities; it is used in malignant eruptive diseases, dysentery, some kinds of diarrhœa, atonic gout, chronic rheumatism, and the fever attending dentition in weak infants; according to the last edition of the London Pharmacopœia, this drug is produced by *Dorstenia contrayerva;* Dr.

Houston, however, asserts that it came from *D. Houstoni*, and another species referred by botanists to *D. drakena*. Guibourt says there are two kinds, one furnished by *D. braziliensis*, and the other by *D. contrayerva*, *D. Houstoni*, and *D. drakena*. Finally, Dr. Theodore Martius refers the drug to *D. Braziliensis*, *Contrayerva*, *Houstoni*, and an undescribed species which he calls *D. opifera*, a sort which is more farinaceous than the other; the only conclusion from this is, that *Contrayerva* is in all probability produced by several species. (L.)

FICUS. (De Cand. Bot. Gal. 419. Endl. Gen. Pl. (*Moreæ*) 278.)

FICUS BENGHALENSIS. *Jamaica fig tree.* East Indies.

Milky juice used against the poison of manchineel. (G.)

FICUS CARICA. *F. vulgaris, Fig tree.* Persia and Asia Minor.

Dried fruit, *Carica*, *Caricæ fructus*, emollient, laxative, pectoral, used as a suppurative poultice; milk of the tree caustic, consumes warts; leaves kept long upon the skin, inflame it. (G.) All the parts abound in an acrid milky juice, which produces a disagreeable burning sensation in the fauces; when quite ripe, this disappears in the fruit, which becomes sweet, high-flavoured, wholesome, and delicious; eaten in moderation they are digestible, but in too great quantity they occasion flatulence and diarrhœa; they are pectoral and demulcent, and are occasionally eaten to remove habitual costiveness; roasted and split, they are sometimes used as poultices for gumboils, and other circumscribed maturating tumours; they are employed in making the confection of senna, and in other preparations. (L.)

FICUS DÆMONA. Tanjore.

Juice extremely poisonous. (L.)

FICUS ELASTICA. Silhet.

A great quantity of tenacious juice flows from the branches, when wounded, and inspissates into an excellent kind of *caoutchouc*, which is now imported: there is no reason to doubt that many other species of this genus yield a juice with quite the same properties; it is believed that the *Java caoutchouc* is produced exclusively by figs. (L.)

FICUS INDICA. *Banyan tree, Indian fig tree.* East Indies.

Milky juice glutinous, and becomes a soft kind of *Indian rubber*. (G.) *Gum lac* is obtained from the fruit in abundance; the white glutinous juice is applied to the teeth and gums to cure the toothache; it is also considered a valuable application to the soles of the feet, when cracked and inflamed; the bark is supposed to be a powerful tonic, and is administered by the Hindoos in diabetes. (L.)

FICUS RACEMOSA. East Indies.

Bark slightly astringent, and has particular virtues in hæmaturia and menorrhagia; juice of the root considered a powerful tonic. (L.)

FICUS RELIGIOSA. East Indies.

Seeds considered by the Indian doctors to be cooling and alterative. (L.) Bark deemed a good tonic. (O'Sh.)

FICUS SEPTICA.

A powerful vermifuge; milky juice very acrid. (G.) Leaves emetic. (L.)

FICUS SYCAMORUS. *Sycamore fig.*

Fruit less agreeable and less digestible than that of *F. carica.* (G.)

FICUS TOXICARIA. India.

Used to impoison weapons. (G.) Juice a virulent poison. (L.)

HUMULUS. (De Cand. Bot. Gal. 419. Endl. Gen. Pl. (*Canabineæ*) 286.)

*HUMULUS LUPULUS. (E. B. 427.) *Lupulus, Common hop.*

Fl. greenish-yellow. July. Perennial. Climbing shrub. Hedges, &c.

Young shoots eaten as a depurative; *Hops, Humuli strobile,* bitter, inebriating, diuretic, also sedative; used to flavour beer, and the only legal substance for that purpose; yellow powder sifted from the strobiles, *Lupuline, Lupulinum,* qualities the same as the strobiles, but much stronger; yields an essential oil. (G.) The ripe catkins are said to be narcotic and extremely bitter; pillows stuffed with them have been used as agreeable sedatives; the infusion and tincture act as pleasant agreeable tonics, but Dr. Pereira doubts the existence of the narcotic effects that have been ascribed to hops; certain yellow grains called *Lupuline,* found sticking to the surface of the fruit, are considered to be the seat of the active principle. (L.) The use of hop in brewing is to prevent the beer from becoming sour; the young shoots, both of the wild and improved hops, are eaten early in the spring, as asparagus, and were formerly brought to market for that purpose; the stalk and leaves will dye wool yellow; from the stalks a strong cloth is made in Sweden; a decoction of the roots is said to be as good a sudorific as *Sarsaparilla,* and the smell of the flowers is soporific; during the illness of George III. in 1787, a pillow filled with hops was used instead of opiates. (Lou.)

PARIETARIA. (De Cand. Bot. Gal. 418. Endl. Gen. Pl. 284.)

*PARIETARIA OFFICINALIS. (E. B. 879.) *Helsine, Parietaria, Pellitory of the wall.*

Fl. purplish-green. June, September. Perennial. Old walls.

Herb cooling, opening, diuretic, pectoral, antiasthmatic. (G.)

MORUS. (De Cand. Bot. Gal. 419. Endl. Gen. Pl. (*Moreæ*) 283.)

MORUS ALBA. *White mulberry.* China and Persia.

Fruit esculent. (G.) Root said to be an excellent vermifuge. (L.)

MORUS NIGRA. *Black mulberry.* Persia.

Bark of the root cathartic, vermifuge, dose ʒss. in powder; fruit, *Mora, Mori baccæ*, esculent, made into a syrup. (G.) Fruit cooling and laxative; when not too ripe allays thirst, and proves exceedingly grateful in febrile diseases; when eaten too freely as an article of food, it is apt to occasion diarrhœa. (Thompson.) Bark said to be cathartic and anthelmintic. (L.)

MORUS RUBRA. *Red mulberry.* North America.

Fruit esculent. (G.)

MORUS TINCTORIA. *M. Xanthoxylum, Fustic.* West Indies.

Abounds with a sulphurous milk; wood, *Old fustic, Bois jaune, Bois d'Angleterre*, sulphur-coloured, in large blocks; with alum dyes a very durable yellow colour, with iron liquor drab colour, and with both mordants an olive. (G.)

URTICA. (De Cand. Bot. Gal. 418. Endl. Gen. Pl. 283.)

URTICA CRENULATA. Bengal.

Reported to be one of the most venomous of the genus. M. Leschenault mentions his having been dangerously affected by their sting, (vide Lindl. Nat. System, 176.) of which, however, Roxburgh says nothing. (L.)

*URTICA DIOICA. (E. B. 1750.) *Urtica, Common nettle.*

Fl. greenish. July, August. Perennial. Waste places and hedges.

Root astringent, seed pectoral. (G.) Independently of its well-known stinging properties, which indicate the presence of a virulent poisonous principle, a decoction strongly salted will coagulate milk without giving it any unpleasant flavour; the whole plant is esteemed astringent and diuretic. (L. ex Burnett.) The tops of the tender shoots of this plant are sometimes used as a potherb early in spring; the stalk is found to have a texture somewhat like that of hemp, and to be capable of being manufactured into cloth, ropes, and paper. As a remedy for the sting of the nettle, its own juice, or that of the dock, may be applied. (Lou.)

URTICA HETEROPHYLLA. Malabar.

Very severe, though not permanent pain, is produced by the sting of this nettle. (L.)

*URTICA PILULIFERA. (E. B. 148.) *A. romana. Roman nettle.*

Fl. greenish. June, July. Annual. Under walls and among rubbish near the sea. Norfolk and Suffolk.

Root astringent, seeds pectoral. (G.)

*URTICA URENS. (E. B. 1236.) *Small stinging nettle.*

Fl. green. June, October. Annual. Waste places and cultivated ground.

Root astringent, diuretic, depurative; plant used in palsy and lethargy as an irritant, producing a crop of small blisters on the skin; the young shoots boiled as a potherb. (G.)

ORDER 140.—JUGLANDEÆ. (De Cand. Bot. Gal. 420.)

Flowers monœcious; *male flower* amentaceous, *perigone* scaly, 2—6 lobed; *stamens* hypogynous; indefinite in number, filaments very short, free; *anthers* two-celled, innate; *female flower, perigone* double or single, adherent to the ovary, the outer four-divided, the inner, when present, four-petalous; *ovary* one-seeded, ovule erect; *styles* 1—2, very short, with two thick stigmas, or none, and then the stigma is large, discoid, or lobed; *drupe* fleshy, containing a 2—4 partitioned nut; *seed* with cerebriform convolutions, more or less four-lobed, covered by a membranaceous integument; *embryo* large, exalbuminous; *cotyledons* fleshy, two-lobed; *radicle* superior. *Tree,* with alternate, imparipinnate *leaves,* stipules none; *female flowers* terminal, 1—3, or more, in a loose spike; *male flower* remote, closely spiked.

JUGLANS. (De Cand. Bot. Gal. 420.)

JUGLANS ALBA. *American hiccory.* North America.

Bark, green leaves, and rind of fruit, used in dyeing, with alum, a bright yellow colour.

JUGLANS CINEREA. *Butter nut, Pennsylvania walnut.* United States.

Inner bark, especially of the root, *Juglans P. U. S.*, a very mild, innocent, and efficacious laxative, and used against worms; usually employed in America in the form of an extract; bark of stem said to be rubefacient.

**JUGLANS REGIA. *Common walnut.*

Fruit globose. Fl. straw-coloured. May, June. Large tree. Native of Persia.

Sap yields sugar; kernels of seeds cooling, but are difficult of digestion; when old acrid; yield half their weight of oil by expression; peel of fruit used in dyeing brown colours; leaves detersive, diaphoretic, antiarthritic, antisyphilitic; inner bark emetic, and also cathartic, when given in pills; spongy substance within the nut astringent. (G.) In Circassia the tree is pierced in the spring, and a spigot left for some time in the hole; when the spigot is withdrawn, a clear sweet liquor flows out, which is left to coagulate, and on some occasions they refine it; it is considered by them as a most valuable medicine for diseases of the lungs and general debility. (Spencer's Circassia.) The very young fruit, bruised and formed into a conserve, by boiling in coarse sugar, forms an agreeable and effective purgative without griping. (Lou.) *Pickled walnuts.* The young fruit salted and then steeped in vinegar, with spices, used as a condiment. (G.) The bark of the root is stated to be rubefacient, the inner bark of the stem emetic. These reputed properties demand investigation. (O'Sh.)

ORDER 141.—AMENTACEÆ. (De Cand. Bot. Gal. 420.) (Endl. Gen. Pl.) (Class Julifloræ.) *Divided into various orders.*

Flowers diœcious, monœcious, or rarely hermaphrodite; *male flower* capitate, or in a catkin, furnished with a scale, or squamiferous perigone; *stamens* inserted on the scale, very rarely monadelphous; *anthers* bilocular; *female flower* solitary, fasciculated or amentaceous, furnished with a scale or perigone; *ovary* one, (rarely more,) free; *stigmas* numerous; *pericarps* as many as the ovaries, osseous, or membranaceous; *albumen* none, or thin; *embryo* straight, or curved, flat; *radicle* generally superior. *Trees* or *shrubs,* with alternate *leaves,* which are stipulate when young.

ALNUS. (De Cand. Bot. Gal. 412. Endl. Gen. Pl. (*Betulaceæ*) 272.)

*ALNUS GLUTINOSA. (E. B. 1508.) *Alnus, Betula alnus, Alder.*

Fl. catkins green. March, April. Tree. Moist ground near rivers.

Bark and leaves very astringent; vulnerary. (G.) A decoction of the bark is employed as a gargle in relaxation of the mucous membrane of the fauces, and in double the dose of cinchona it has been administered with success in cases of ague. (L.) The timber is used for a variety of purposes, and in general for all works intended to be constantly under water, for turnery and furniture; the bark is used by dyers and tanners, the sap being of a yellow colour, and very astringent. (Lou.)

BETULA. (De Cand. Bot. Gal. 422. Endl. Gen. Pl. (*Betulaceæ*) 272.)

*BETULA ALBA. (E. B. 2198.) *Betula, Birch.*

Fl. catkins green. April, May. Large tree. Woods.

Leaves used in itch and dropsy. (G.) Bark applicable to many useful purposes; employed as a febrifuge, and yields by distillation a pyroligneous oil, to which Russia leather, dressed with it, is said to owe its remarkable odour. (L.)

CASTANEA. (De Cand. Bot. Gal. 428. Endl. Gen. Pl. (*Cupuliferæ*) 275.)

CASTANEA PUMILA. *Chinquassin.* North America.

Bark, *Castanea, P. U. S.*, astringent. (G.) Fruit very sweet and agreeable to eat. (Lou.)

*CASTANEA VULGARIS. *Fagus castanea, Spanish chestnut.*

Fl. yellowish. May, June. Large tree. Woods. Doubtful native.

Bark astringent; fruit dried upon hurdles over a clear fire, nutritive, pectoral. (G.) Dried fruit not only boiled and roasted, but ground into meal, and puddings, cakes, and bread, are made from it. (Lou.)

CELTIS. (De Cand. Bot. Gal. 421. Endl. Gen. Pl. (*Celtideæ*) 276.)

CELTIS AUSTRALIS. *Nettle tree.* South Europe.

Berries astringent, esculent; kernels yield an oil; wood dyes brown. (G.) The wood, one of the hardest we are acquainted with, very tough and flexible, used in France for hay-forks and other agricultural purposes. (Lou.)

COMPTONIA. (Lind. Med. Bot. 306.)

COMPTONIA ASPLENIFOLIA. *Liquid ambar asplenifolium.* United States.

Tonic and astringent; in the United States it is a favourite domestic remedy in the cure of diarrhœa. (L.)

CORYLUS. (De Cand. Bot. Gal. 419. Endl. Gen. Pl. (*Cupuliferæ*) 274.)

*CORYLUS AVELLANA. (E. B. 723.) *Avellana, Hazel, Nut tree.*

Fl. March, April. Large shrub. Hedges and copses.

Nuts imported from Barcelona; kernel of the nut oily, pectoral, used in emulsions, yields oil. (G.)

FAGUS. (De Cand. Bot Gal. 428. Endl. Gen. Pl. (*Cupuliferæ*) 275.)

*FAGUS SYLVATICA. (E. B. 1846.) *Fagus, Beech.*

Fl. yellowish-green. April, May. Large tree. Woods.

Seeds, *Beech mast*, useful in gravelly complaints; yield oil by expression. (G.)

MYRICA. (De Cand. Bot. Gal. 431. Endl. Gen. Pl. (*Myricaceæ*) 271.)

MYRICA CAROLINENSIS. North America.

Yields green wax. (G.)

MYRICA CERIFERA. *Bayberry, Candleberry myrtle, Waxberry.* United States.

Roots in infusion very astringent; berries yield green wax. (G.) Bark of the root acrid and astringent, in large doses producing vomiting, accompanied by a burning sensation; costiveness generally follows its use. The fruit is covered with a waxy, aromatic secretion, which may be collected and purified, and is used for many of the purposes for which beeswax and tallow are employed. It has occasionally been used in pharmacy in various compositions intended for external use, and is mild or stimulating according as it is more or less pure. (Bigelow.) (L.) In Carolina they also make sealing wax from these berries. (Lou.)

*MYRICA GALE. (E. B. 562.) *Gale frutex, Dutch myrtle, Sweet gale, Sweet willow.*

Fl. green. May. Small shrub. Bogs and marshy ground.

Strong smelling, driving away insects; leaves astringent, substituted for tea, vermifuge, used as spice. (G.) The infusion has been used to cure the itch, and also as a vermifuge; the leaves are used as a substitute for hops in brewing. (L.)

MYRICA PENSYLVANICA. North America.

Yields green wax.

PLATANUS. (De Cand. Bot. Gal. 480. Endl. Gen Pl. (*Plataneæ*) 289.)

PLATANUS OCCIDENTALIS. *Virginian plane tree.* North America.

Root vulnerary, dyes red. (G.)

PLATANUS ORIENTALIS. *Oriental plane tree.* Asia.

Leaves ophthalmic in wine; bark antiscorbutic, infused in vinegar. (Vide *Liquid ambar.*)

POPULUS. (De Cand. Bot. Gal. 427. Endl. Gen. Pl. (*Salicineæ*) 290.)

*POPULUS ALBA. (E. B. 1618.) *Abele, White poplar.*

Fl. April. Large tree. Moist and mountain woods.

Bark useful in stranguary. (G.)

POPULUS BALSAMIFERA. *Carolina poplar, Tacamahac poplar.* North America, Siberia.

Yields *Tacamahaca* in the lump; buds very resinous, infused in oil to form a vulnerary balsam. (G.) Buds gathered for medicinal purposes; their resinous excretion, collected in shells, is brought to Europe from Canada, and is said to be diuretic and antiscorbutic. (L.)

POPULUS CANDICANS. North America.

POPULUS LAURIFOLIA.

Have similar properties to the last. (L.)

POPULUS DILATATA. *Lombardy poplar.* Italy.

Properties like those of *P. nigra.*

**POPULUS FASTIGIATA. *Italian poplar, Lombardy poplar.*

Fl. April. Large tree. Native of the East.

Bark dyes mordore colour. (G.)

*POPULUS NIGRA. (E. B. 1910.) *Black poplar.*

Fl. April. Large tree. Watery places and river banks.

Buds resinous. (G.) The young leaf buds have a strong aromatic bitter taste, and when fresh crushed, are occasionally used in the preparation of an ointment (*Unguentum populum*) for tumours, wounds and burns; they are also employed as the basis of a balsam, and sometimes used for colic, headache, &c. (L.)

POPULUS PYRAMIDALIS. *Lombardy poplar.*

With nitro muriate of tin dyes a fine yellow. (G.)

*POPULUS TREMULA. (E. B. 1909.) *Aspen, Trembling poplar.*

Fl. April. Large tree. Moist woods.

Bark useful in stranguary.

POPULUS TREMULOIDES. *P. trepida.* United States.

Bark tonic and stomachic. (G.) Bark esteemed as a febrifuge in the United States. (L.)

QUERCUS. (De Cand. Bot. Gal. 428. Endl. Gen. Pl. (*Cupuliferæ*) 274.)

QUERCUS ALBA. *White oak.* North America.

Bark emetic.

QUERCUS ÆGYLOPS. *Holm oak.* The Levant.

Cups, *Valonia*, very large, used in dyeing instead of nut galls; imported from Greece. (G.)

QUERCUS BALLOTA. Barbary.

Acorns used as food, yield oil. (G.)

QUERCUS COCCIFERA. *Kermes oak.* South of France.

Is infested by an insect belonging to the genus coccus, and yielding the *Kermes* dye, from which scarlet cloths are often prepared. (L.)

QUERCUS CASTANEA. North America.

QUERCUS CASTILLANA.

QUERCUS ESCULUS. South of Europe.

Acorns eatable. (G.)

QUERCUS FALCATA. United States.

Leaves used externally in gangrene. (G.) Leaves employed in gangrene on account of their astringency. (L.)

QUERCUS ILEX. *Evergreen oak.* South of Europe.

Astringent, more so than the common oak. On this live the kermes insects.

QUERCUS INFECTORIA. *Gall oak.* Asia Minor.

Excrescences, *Nut galls, Gallæ*, very astringent, tonic, antiseptic; those from which the insect has not escaped are the most esteemed; imported from Aleppo. (G.) From this the *Oak galls* of the shops are all obtained. (L.) As nut galls contain a larger portion of tannic acid than any other known vegetable production, they possess in the highest degree the properties of an astringent; they are used as a tonic in intermittents, as an astringent in hemorrhages; as a chemical antidote in cases of poisoning by ipecacuanha, emetine, opium, colchicum, nux vomica, and others whose activity depends on an organic alkali; they are also employed as a topical astringent in relaxed uvula, gleet, leucorrhœa, flabby ulcers with profuse discharge, piles, &c.; the dose of the powder is from 10 to 20 grains. (Pereira.)

QUERCUS NIGRA. *Q. tinctoria*, *Quercitron*, *Black oak.* North America.

Bark used in dyeing yellow; imported from America. (G.)

*QUERCUS PEDUNCULATA. (E. B. 1342.) *Q. robur*, *British oak.*

Fl. May. Large tree. Woods and hedges.

Bark, *Quercus cortex*, chiefly used for tanning leather; astringent, febrifuge, gr. xv. to ʒss. every two hours; also externally in fomentation; a decoction of the bark, with some alum, very useful in relaxations of the uvula; seeds, *Okecorn*, *Acorns*, *Glandes quercinæ*, and their calyces, *Cups*, *Cupulæ*, as also the wood, leaves, and the excrescences produced by the bite of insects, *Oak apples*, are equally astringent, and of great use in tanning and dyeing. *Tanner's bark*, the exhausted bark left after tanning leather; used by gardeners to produce a slight equable heat by its fermentation; *Tan balls*, the muddy sediment of tan pits, used for summer fuel. (G.) The French used the bark extensively during the last war, as a substitute for *Cinchona.* (L.)

QUERCUS SESSILIFLORA.

Has similar properties. (L.)

QUERCUS SUBER. *Cork tree.* South of France.

Bark, *Cork*, *Suber*, very light, elastic, astringent, more used in stopping vessels than in medicine. (G.)

SALIX. (De Cand. Bot. Gal. 423. Endl. Gen. Pl. (*Salicineæ*) 290.)

*SALIX ALBA. (E. B. 2430.) *Salix*, *White willow.*

Fl. yellow. April, May. Large tree. Marshy woods.

Bark, *Salicis cortex P. D.*, very bitter, febrifuge, substituted for Peruvian bark; leaves astringent, used in tanning. (G.) According to Smith, the bark of this species, although valuable in the treatment of agues, is inferior to that of *S. Russelliana;* it is nevertheless the kind recommended by Mr. Stone in 1763. (L.)

*SALIX AMYGDALINA. (E. B. 1936.) *Almond-leaved willow.*

Fl. yellowish. Small tree. Banks of ditches and rivers.

SALIX BABYLONICA. *Weeping willow.* Persia.

*SALIX CAPREA. (E. B. 1488.) *Great round-leaved sallow, Sallow.*

Fl. yellow. April, May. Small tree. Woods and dry pastures.

SALIX ERIOCEPHALA. (*Bark, salix P. U. S.*) North America.

*SALIX FRAGILIS. (E. B. 1807.) *Crack willow.*

Fl. yellow. April, May. Small tree. Banks of rivers and marshy ground.

*SALIX HERBACEA. (E. B. 1907.) *Least willow.*

Fl. June. Small shrub. Lofty mountains in Wales.

*SALIX HELIX. (E. B. 1343.) *S. monandra, Yellow dwarf willow, Rose willow.*

A variety of

*SALIX PURPUREA. (E. B. 1388.) *Bitter purple willow, Norfolk purple willow.*

Fl. yellowish. March, April. Large shrub. Norfolk.

*SALIX VIMINALIS. (E. B. 1898.) *Common osier.*

Fl. yellow. April, May. Large shrub. Osier grounds.

Barks very bitter, febrifuge; substituted for *Peruvian bark;* leaves astringent, used in tanning. (G.)

*SALIX PENTANDRA. (E. B. 1805.) *S. Laurea, Bay willow, Sweet willow.*

Fl. yellowish. May. June. Small tree. Banks of rivers, &c.

Bark, the original *Willow bark,* recommended as a febrifuge; leaves aromatic, yield prussic acid by distillation, when dried with one-thirtieth of potash; dye silk, linen, and woollen, impregnated with alum, of a fine yellow. (G.) Nees von Esenbeck prefers the bark of this to that of any other species; there is an aroma in it which the others want. (L.)

*SALIX RUSSELLIANA. (E. B. 1808.) *Bedford willow.*

Fl. yellow. April, May. Large tree. Marshy woods and osier grounds.

Sir James Smith tells us this is the most valuable officinal species, and that if practitioners have sometimes been disappointed in its use, they probably chanced in such cases to give *S. fragilis,* an allied, but different species, which is almost inert. (L.)

ULMUS. (De Cand. Bot. Gal. 421. Endl. Gen. Pl. (*Ulmaceæ*) 275.)

*ULMUS CAMPESTRIS. (E. B. 1886.) *Ulmus, Common small-leaved elm.*

Fl. reddish-purple. March, April. Large tree. Hampshire, Sussex, &c.

Exudes *Ulmine;* inner tough bark, *Ulmi cortex,* astringent, febrifuge; leaves vulnerary. (G.) The inner bark of the elm is demulcent and diuretic; it is also slightly astringent, and therefore a feeble tonic; it has been used in some skin diseases, but is rarely resorted to. Dr. Pereira mentions *U. glabra* as another species officinally employed; the bark should be stripped in the spring. (L.) Lysons recommended the decoction of this bark in cutaneous eruptions; and Dr. Lettsom found it successful in ichthyosis; it has now fallen into disuse. (Pereira.)

ULMUS CHINENSIS. East Indies.

Leaves used as tea.

ULMUS EFFUSA. *U. pedunculata.* South of Europe.

Qualities the same as those of *U. campestris.*

ULMUS FULVA. *Slippery elm.* America.

Inner bark, *Ulmus P. U. S.*, febrifuge.

ORDER 142.—SAURUREÆ. (Endl. Gen. Pl. 266. Lindl. Nat. Syst. 184.)

Flowers naked, seated upon a scale, hermaphrodite; *stamens* six, hypogynous, persistent, filaments slender; *anthers* two-lobed, bursting longitudinally; *ovaries* four, each distinct, with one ascending ovule, and a sessile recurved stigma, or connate into a three or four-celled pistil, with a few ovules ascending from the edge of the projecting semi-dissepiments; *fruit,* either consisting of four fleshy, indehiscent nuts, or a three or four-celled capsule, opening at the apex, and containing a few ascending seeds; *seeds* with a membranous integument; *embryo* minute, lying in a fleshy lenticular sac, seated on the outside of hard mealy albumen, at the end most remote from the hilum. *Herbaceous plants* growing in marshy places, or floating in water; *leaves* alternate, with stipules; *hairs* jointed; *flowers* growing in spikes.

APONOGETON. (Royle.)

APONOGETON MONOSTACHYON. India.

Roots esculent, nearly as good as potatoes, and much esteemed by the natives. (O'Sh.)

SAURURUS. (Endl. Gen. Pl. 266.)

SAURURUS VERNUS. *Mathushea.* North America.

Root fresh and roasted used as an emollient poultice, and to allay inflammation. (G.)

ORDER 143. PIPERACEÆ. (Endl. Gen. Pl. 265. Lind. Nat. Syst. 185.)

Flowers naked, hermaphrodite, with a bract on the outside; *stamens* definite, or indefinite, arranged on one side, or all round the ovary, to which they adhere more or less; *anthers* 1—2 celled; *ovary* superior, simple, one-celled, containing a single erect ovule; *stigma* sessile, simple; *fruit* somewhat fleshy, indehiscent, one-celled, one-seeded; *seed* erect; *embryo* placed in a fleshy sac, opposite the hilum, on the outside of the albumen. *Shrubs* or *herbaceous plants,* with opposite, exstipulate *leaves,* and generally sessile *flowers,* arranged in spikes.

Herbs aromatic, seeds hot, used as spices.

PEPEROMIA. (Lindl. Nat. Syst. 186. Endl. Gen. Pl. (*Piper*) 265.)

PEPEROMIA PELTATA. *Piper peltatum.* Brazil.

Fruit used externally in swellings and dropsy. (G.) The fruit called *Cuapeba* or *Broad-leaf*, in Brazil; used in decoction as a powerful diuretic. (L. ex Martius.)

PEPEROMIA UMBELLATA. *Piper umbellatum, Santa Maria leaf.* South America.

Herb, in syrup, used in colds and coughs. (G.) The roots of this plant (the *Periparaba* of Rio de Janeiro, and St. Paul's, *Caapeba* in Minas Geraes), have a distinguished place among the domestic remedies of Brazil; they have been used with great effect in obstructions of the abdominal organs, which, together with general debility, are a frequent consequence of intermitting fevers; they increase the activity of the lymphatic system in particular, produce a speedy effect, and promote all the secretions; the leaves are often prescribed as tea for swellings of the glands. (L. ex Martius.)

PIPER. (Endl. Gen. Pl. 265.)

PIPER AFZELII. *Guinea cubebs.* Sierra Leone.

This plant gave rise to the statement that *Cubebs* are obtained from Guinea; it is extremely different from either *P. cubeba* or *caninum*, and the quality of its fruit has still to be ascertained. (L.)

PIPER AMALAGO. *Pepper elder.* Jamaica.

Used externally in baths and fomentations. (G.) Leaves and young shoots discutient, root in infusion resolutive, sudorific, diaphoretic. (L.)

PIPER ANGUSTIFOLIUM. *Narrow-leaved pepper, Matico.*

Decoction used in venereal diseases. (G.) The leaves have been strongly recommended as a styptic.

PIPER ANISATUM. South America.

Leaves and fruit have the smell and taste of anise: a decoction of the latter used to wash ulcers. (L.)

PIPER BETLE. *Betel.* East Indies.

Leaves bitter, stomachic, tonic, highly aphrodisiac, used as a masticatory with *Areka nut.* (G.) Leaf chewed by the Malays with lime and slices of the nut of *Areca oleracea*, or the *Pinang*. It produces intoxicating effects, stimulates powerfully the salivary glands and digestive organs, and diminishes the perspiration of the skin. (L.)

PIPER CANINUM. Java and Prince of Wales's Island.

Dr. Blume considers that the *Cubebs* of commerce are chiefly furnished by this species, which is quite distinct from *P. cubeba*; the fruit is smaller and shorter stalked, having a distinct anise flavour, and less pungent than in that species. (L.)

Piper carpapiga. *Carpapiga.*

Leaves used in dyspepsia, and to preserve stuffed animals from insects. (G.)

Piper chaba. Indian Archipelago.

Properties the same as those of *P. longum.* (L.)

Piper cordifolium.

Acrid.

Piper crystallinum. *Peperomia crystallina.*

Has the odour of anise, and may be used for it. (G.)

Piper cubeba. *Cubeb.* Java and Prince of Wales's Island.

Fruit, *Cabob pepper*, *Tailed pepper*, *Cubebæ*, *Cubeba*, the same qualities as the other peppers, used in cookery as a spice, and to ornament poultry, stuck in rows on the sides; also in gonorrhœa; ʒss. to ʒjss. three times a day, but in India ʒiij. six or eight times a day. (G.) The ripe fruit is called *Cubebs* in the shops; dried and pounded it is aromatic, pungent, stimulant, and purgative, and acts as a specific in arresting gonorrhœal discharges. (L.)

Piper inebrians.

Green herb, used to make an inebriating drink, as may indeed be most of this genus. (G.)

Piper longum. *Long peppervine.* India.

Unripe fruit, *Long pepper*, *Piper longum*, *Piperis longi fructus*, opening, attenuant, stimulant, in doses similar to those of the P. nigrum. *Elephant pepper* is a larger variety of this species. (G.) Female spikes dried form the *Long pepper* of the shops. Root, and the thickest part of the stems, cut into small slices and dried, are much consumed for medical purposes in India, under the name of "*Pippula moola.*" (Roxb.) The effects of "*Long pepper*" are analogous to those of "*Black pepper*;" some consider it less powerful, and others are agreed in its being the more acrid of the two. (L.)

Piper methysticum. *Ava.* South Sea Islands.

Used in tincture against chronic rheumatism; macerated in water, it forms an intoxicating beverage, of which the Otaheitans make use to cure venereal affections; they make themselves drunk, after which very copious perspiration comes on; this lasts three days, at the end of which time we are told the patient is cured. (L.)

Piper nigrum. *P. aromaticum*, πεπερι. (*Dioscorid.*) *Black pepper*, *Black pepper vine.* East and West Indies.

Herb acrid, aromatic, stimulant, sialogogue. Berry, *Black pepper*, *Mellaghoo*, *Piper nigrum. Piperis nigri baccæ*, the same; also much used in cookery as a spice, particularly in pilaus, mullaghootanies, and curries, and in preserving lampreys and ormiers; dose gr. v. to ℈j., and in larger doses in intermittent fevers; also used to drive away insects; *White pepper, Piper album*, made by soaking black pepper in salt water, and rubbing off the outside skin, or by merely rubbing the over-ripe berries that fall from the vines, is milder. (G.) The hot, acrid black pepper of the shops consists of the berries dried with the pulp adhering; the white pepper is the same thing, only the pulp is washed off before the fruit is dried; it is principally used as a condiment to stimulate the stomach, and promote digestion; as a medicine, it is employed in the form of ointment, mixed with lard, against tænia capitis, in affections of the mouth and throat requiring a powerful acrid, such as relaxed uvula, or paralysis of the tongue; it may be employed as a masticatory; in spirit and water, it is a popular remedy for preventing the return of a paroxysm of intermitting fever. A crystalline substance, called *Piperine*, obtained from this spice, has been recommended and employed by the Italians as a febrifuge in intermittent fevers; it is said to be more certain and speedy, and also milder in its operation, than the cinchona alkalies. In excessive doses pepper is a dangerous stimulant. (L.)

Piper obtusifolium. *Mecaxochitle, Small American long pepper.* West Indies.

Leaves used to flavour chocolate. (G.)

Piper reticulatum. *Jaborand.* West Indies, Brazil.

Juice an antidote against the poison of mushrooms and cassada. (G.) The roots of this plant, called *Jaboranda* in Brazil, and in a less degree, the ripe catkins, are used as stimulants on account of their pungent aromatic qualities. The root is a very powerful sialogogue, and often cures nervous toothache. The leaves, bruised, are applied with success to the bite of serpents. (L.)

Piper siriboa. East Indies.

Employed in the same way as *P. betle.*

Piper sylvaticum. *Paharipeepul, Mountain long pepper.* Bengal.

Used in Bengal, both green and ripe, as long pepper.

Piper trioicum. India.

Fruit exceedingly pungent, reckoned by pepper merchants at Madras equal, if not superior, to the best pepper of the Malabar coast or Ceylon. See Roxb. l. c., for important matter relating to the pepper vines.

ORDER 144.—CONIFERÆ. (De Cand. Bot. Gal. 431. Endl. Gen. Pl. (*Divided into several Orders*) 258.)

Flowers monœcious, or diœcious, disposed in a catkin. *Male fl. Scales* numerous, variously arranged, either bearing or covering the anthers, perigone none; *anthers* various in number, one or many-celled, either inserted on bractæiform scales, or supported by a pedicel. *Fem. fl. Scales* bractæiform, variously arranged, sometimes becoming enlarged and succulent after flowering, or adnate to the fruit; *cupula* generally double, rarely simple, one-flowered, surrounding the ovary (perigone?); *ovary* one; *style* sessile, single, small; *pericarp* indehiscent, one-celled, coriaceous, or osseous; *seed* one, pendulous, albuminous; *embryo* straight, in the axis of the fleshy and oily albumen; *radicle* directed towards the umbilicus, often attenuated at the apex, and adnate to the albumen; *cotyledons* two, opposite, or many in a whorl. *Resinous trees* or *shrubs*: *leaves* alternate, or whorled, or rarely opposite, frequently acerose, persistent.

ABIES. (De Cand. 434. Endl. Gen. Pl. (*Abietinæ, Pinus.*) 260.)

ABIES BALSAMEA. *Picea balsamea, Pinus balsamea, Balm of Gilead fir.* North America.

The oleo resin, called *Canada balsam*, is furnished by this species. (L.)

ABIES CANADENSIS. *Pinus canadensis, Hemlock spruce fir.* North America.

Young roots, *Turiones pini,* in beer, antiscorbutic, cooling, antiseptic, and tonic. (G.) Said to yield an oleo resin analogous to *Canada balsam.* (Pereira.)

ABIES EXCELSA. *Pinus abies, Norway spruce fir, Spruce fir.* Alps.

Exudes common *Frankincense*, and yields *Burgundy pitch* by incision; tops used to make *Spruce beer.* (G.)

ABIES NIGRA. *Pinus nigra, Black spruce fir.* America.

The concentrated aqueous decoction of the young branches is *Essence of spruce,* used in the preparation of *Spruce beer.* (Pereira.)

**ABIES PICEA. *A. pectinata, Pinus picea, Picea pectinata, Common fir, Silver fir-tree, Pitch-tree.*

Fl. May. Large tree. Cultivated in woods. Native of the Alps.

Yields *Strasburgh turpentine*, by puncturing the small vesicles of the bark in which it is contained, and *Fir resin*, by larger incisions. (G.)

CALLITRIS. (Endl. Gen. Pl. (*Cupressineæ*) 259.)

CALLITRIS QUADRIVALVIS. *Thuja quadrivalvis, T. articulata, Arar-tree.* North of Africa.

Yields *Gum sandarach.* (G.) Yields the resinous substance called *Sandarach*, from which is prepared the pounce employed in rendering parchment fit to write upon. (L.)

CUPRESSUS. (De Cand. Bot. Gal. 432. Endl. Gen. Pl. 259.)

**CUPRESSUS FASTIGIATA. *C. sempervirens, Cupressus, Cypress.*

Fl. April. Large tree. Native of south of Europe.

Wood and berries astringent, vermifuge; strobiles, *Nuces cupressus*, astringent.

DAMMARA. (Endl. Gen. Pl. (*Abietinæ*) 261.)

DAMMARA . . . . . *Agathis loranthifolia, Pinus dammara, Dammar pine.* East Indies.

Yields *Ava dammar.*

DAMMARA AUSTRALIS. New Zealand.

Yields *Cowdie pine resin*, used in varnishes.

EPHEDRA. (De Cand. Bot. Gal. 432. Endl. Gen. Pl. (*Gnetaceæ*) 263.)

EPHEDRA DISTACHYA. *Shrubby horse-tail.* France.

Berries sweet, eatable, used in lientery and menorrhagia, given in wine. (G.)

JUNIPERUS. (De Cand. Bot. Gal. 432. Endl. Gen. Pl. 258.)

JUNIPERUS BERMUDIANA. *Jamaica cedar.* Bermudas.

Wood used for inclosing crayons.

*JUNIPERUS COMMUNIS. (E. B. 1100.) *Juniperus, Juniper.*

Fl. May. Large shrub. Woods and heaths.

Tops, *Juniperi cacumina*, diuretic, sudorific, antisyphilitic, may be substituted for *Guaiacum;* fruit, *Juniperi baccæ*, incisive, discussive, very stomachic, infusion drank as tea; if the seeds are broken they communicate a bitter flavour. (G.) The fruits called *Juniper berries* are analogous in operation to other terebinthinate substances; they promote the secretion of urine, in large quantities produce irritation of the bladder and heat in the urinary passages, are sudorific, carminative, and are supposed to stimulate the uterus; Mr. Alexander says, that the oil, in doses of four drops, is the most powerful of all diuretics; they are administered in leucorrhœa, gonorrhœa, gleet, &c. (L.) Juniper berries require to remain on the tree two years before they are fully ripe; they have a peculiar aromatic odour, and a sweetish, pungent, bitterish taste, when chewed; in distillation with water they yield a volatile terebinthinate oil of a greenish colour, on which their virtues depend; the flavour and diuretic properties of hollands depend on this oil; it is also supposed to be used for the purpose of flavouring English gin, but for this purpose oil of turpentine is used. (Lou.)

JUNIPERUS PHŒNICIA. *Oxycedrus, Berry-bearing cedar.* South of Europe.

Wood diaphoretic, by distillation yields *Huile de cade;* berries discutient; exudes *American olibanum.* (G.)

**JUNIPERUS SABINA. *Sabina, Savine.*

Fl. April. Small shrub. Native of the Alps.

Leaves, *Sabinæ foliæ*, emmenagogue, producing abortion, diuretic, vermifuge; doses, in powder, gr. xv. to ℈j. or ʒj., twice or thrice a day; externally escharotic, applied to warts, &c., once a day. (G.) Oil of savine is a powerful local stimulant, acting, when applied to the skin, as a rubefacient and vesicant; swallowed, it occasions vomiting and purging; it is a powerful stimulant, and exercises a specific influence over the urino-genital apparatus; in certain cases of amenorrhœa, it acts as a powerful emmenagogue, and in pregnancy it has a strong tendency to produce abortion; it, however, frequently fails, and can only be given to a woman at the risk of her life; savine powder, mixed with verdigris, is used as an efficacious application for the removal of venereal warts, and in the form of ointment it is an excellent means of promoting discharge from blistered surfaces. (L.) As an external local stimulant or escharotic, the dried leaves in powder are applied to warts, flabby ulcers, and carious bones, and the expressed juice diluted, or an infusion of the leaves, as a lotion to gangrenous sores, scabies, and tinea capitis, or mixed with lard and wax, as an issue ointment. (Lou.)

JUNIPERUS VIRGINIANA. *Red cedar.* United States.

Wood, *Carolina cedar*, used for inclosing crayons; leaves used as *Savine.* (G.) Similar in effects to *J. sabina*, for which it is used in North America as a substitute. (L.)

LARIX. (De Cand. Bot. Gal. 434. Endl. Gen. Pl. (*Abietinæ, Pinus*) 260.)

**LARIX EUROPÆA. *L. communis, Larix, Abies larix, Pinus larix, Larch.*

Fl. reddish. May. Large tree. Native of the Alps.

Exudes *Larch gum* and *Briançon manna*, yields by boring *Larch turpentine.* (G.) *Venice turpentine* is obtained from the trunk, a saccharine matter, called *Manna of Briançon*, exudes from the branches, and when the larch forests in Russia take fire, a gum issues from the trees during their combustion which is called *Gummi Orenburgense*, and which is wholly soluble in water like gum arabic. (L.)

**LARIX CEDRUS. *Pinus cedrus, Cedar of Lebanon.*

Fl. May. Large tree. Native of Lebanon and Syria.

Wood astringent, antiseptic. (G.)

PINUS. (De Cand. Bot. Gal. 433. Endl. Gen. Pl. (*Abietinæ*) 260.)

PINUS CEMBRA. *Siberian stone pine.* Siberia.

Yields *Briançon turpentine*; nuts, *Cembra nuts*, eatable, yield oil; shoots yield true *Riga balsam* by distillation. (G.) Said to yield *Carpathian balsam.* (L.)

PINUS MARITIMA. *P. pinaster, Cluster pine, Pinaster.*

Yields *French* or *Bordeaux turpentine.* (G.) *Bordeaux turpentine*, which has the property of solidifying with magnesia, is procured from this plant. (L.)

PINUS PALUSTRIS. *Pitch pine, Swamp pine.* North America.

Yields *American turpentine.* (G.)

PINUS PINEA. *Stone pine.* South of Europe.

Nuts, *Zirbel nuts, Pine nuts*, kernels pectoral, eaten raw or preserved; used in emulsions; yield oil by expression. (G.) Seeds eaten throughout Italy both by the poor and rich. They are sweet as almonds, but with a slight flavour of turpentine. (Lou.)

PINUS PUMILIO. *Mountain pine, Mugho pine.* South of Europe.

Exudes *Hungarian balsam.* (G.)

*PINUS SYLVESTRIS. (E. B. 2460.) *Red deal, Scotch fir.*

Fl. May, June. Large tree. Highland mountains.

Exudes *White resin*, yields by incision common *Turpentine;* inner bark eaten raw, or made into cakes and baked; *Tar* is distilled from it, and *Lamp-black* obtained by burning its refuse branches in tents. (G.)

PINUS TÆDA. *Frankincense pine.* North America.

Yields *Common turpentine*, but of a less fluid quality than that which flows from *P. palustris.* (Pereira.)

The medicinal substances obtained from these and other coniferous plants are, 1. The oleo-resinous juices called *Turpentine;* 2ndly. The volatile oil obtained therefrom by distillation, called *Oil of turpentine;* 3rdly. The resinous residuum known by the name of *Rosin;* 4thly. *Tar* and *Pitch.* There are various kinds of turpentine, obtained from different trees of the fir, pine, &c. kind, as *Venice turpentine, Strasburgh turpentine*, &c. &c. Upon submitting turpentine to distillation, *Oil of turpentine* is produced, and the residuum is *Rosin* or *Common resin.* On burning the fir-trees in such a manner as to prevent free access of the outward air and thus to produce a slow combustion, *Tar* is produced, and when this is submitted to distillation, an acid liquor, (*Pyroligneous acid*,) and a volatile oil, (*Oil of tar*,) pass over, and the residuum in the still is *Pitch.* Turpentine and oil of turpentine have been employed internally in hæmorrhages, blennorrhœa, puerperal and ordinary fevers, rheumatism, sciatica, and other neuralgic affections, in nephritic diseases, suppression of urine, infantile diabetes, dropsy, spasmodic diseases, obstinate constipation, &c., and externally as a rubefacient in rheumatism, sprains, neuralgic affections of the extremities, &c. Powdered rosin has been applied to wounds to check hæmorrhage, but the principal value of rosin is in the formation of plasters and ointments, to which it communicates great adhesiveness, and some slightly stimulant properties. Tar has been applied externally in various forms of obstinate skin diseases, and as an application to foul ulcers. It is sometimes, also, used internally. Pitch has been employed internally in ichthyosis and in other obstinate skin diseases; its principal use, however, is in the form of an ointment as an application to cutaneous affections of the scalp. (Pereira.)

SALISBURIA. (Endl. Gen. Pl. (*Taxineæ*) 262.)

SALISBURIA ADIANTIFOLIA. *Gingko biloba, Gingko.* Japan. Seeds yield oil. (G.) Seeds large and eatable. (L.)

TAXODIUM. (Endl. Gen. Pl. 259.)

TAXODIUM. *Cupressus disticha, Schubertia disticha, Virginia cypress.* North America.

Leaves dye cinnamon colour. (G.)

TAXUS. (De Cand. Bot. Gal. 432. Endl. Gen. Pl. 261.)

*TAXUS BACCATA. (E. B. 746.) *Taxus, Yew.*

Fl. March. Tree. Mountain woods and cultivated places.

Wood very hard, thought to be poisonous, as were also the berries, *Glob berries*, but they may be eaten; leaves poisonous to cattle; Pollen may be substituted for that of Lycopodium. (G.) Leaves fetid, very poisonous, especially to horses and cows; berries are not dangerous; seeds said to be unwholesome. On the authority of an Italian physician, it is stated that yew-leaves administered in small doses to man have a power similar to that of digitalis, on the action of the heart and arteries, reducing the circulation, and if persisted in too long or given in too large doses, as certainly fatal. Yew is, however, said to have one decided advantage over digitalis, by its effects not accumulating in the system, so that it is a much more manageable and more efficacious remedy. (L. ex Burnett.)

TAXUS ELONGATUS. *Yellow wood.*

Wood scentless; sold for *Yellow sanders*, but of little value. (G.)

TAXUS NUCIFERA. Japan yew.

Berries eatable, aromatic. (G.)

THUJA. (Endl. Gen. Pl. 258.)

THUJA OCCIDENTALIS. *Cédre blanc*, Fr. *American arbor vitæ.* North America.

Leaves alexiterial.

The wood, when burnt, gives out an agreeable smell, and on this account was formerly used in sacrifices. The leaves, formed into a salve, are used by the Indians to cure rheumatism.

THUJA ORIENTALIS. *Chinese arbor vitæ.* China.

Resembles T. occidentalis in appearance.

Class 2. ENDOGENÆ, or MONOCOTYLEDONES.

Leaves with parallel veins; stem with no distinction of wood, pith, and bark; increasing in growth by additions from the inside; flowers with a ternary division; cotyledon one, or if two, alternate.

Sub-Class 1. PETALOIDEÆ.

Calyx and corolla both present in three or six divisions, or imperfectly developed in the form of herbaceous scales upon a spadix.

Order 145.—HYDROCHARIDEÆ. (De Cand. Bot. Gal. 435. Endl. Gen. Pl. 160.)

Flowers inclosed in a spathe, diœcious, rarely hermaphrodite; *male flower, spathe* sometimes one-flowered, the flower sessile, or pedunculated, or many-flowered, the flowers pedunculated; *female* and *hermaphrodite flower, spathe* one-flowered, flower sessile; *perigone* six-cleft, in the female flower adherent to the ovary; outer lobes foliaceous, inner ones petaloid, longer; *stamens* 1—13, inserted on the ovary in hermaphrodite flowers, but on the scite of the ovary in male flowers; *anthers* two-celled; *ovary* inferior; *style* often wanting; *stigmas* 3—6, glandular within, often bifid; *fruit* sometimes crowned by the persistent limb of the perigone, oblong, indehiscent; *pericarp* fleshy, pulpy within, sometimes unilocular, sometimes sub-multilocular, by the greater or less prolongation of the dissepiments; *seeds* numerous, attached either to the parietes, or to the dissepiments, the integuments membranous, hard; *embryo* cylindrical, straight; *albumen* none. *Aquatic herbs,* with sessile, or petiolated, entire, or slightly denticulated *leaves.*

Hydrocharis. (De Cand. Bot. Gal. 436. Endl. Gen. Pl. 163.)

*Hydrocharis morsus ranæ. (E. B. 808.) *Morsus ranæ, Frog bit.*

Fl. white. July. Perennial. Ditches and ponds.

Root astringent.

Stratoites. (De Cand. Bot. Gal. 436. Endl. Gen. Pl. 163.)

*Stratoites aloides. (E. B. 379.) *Aloe palustris, Stratoites, Pistia aloides, Fresh-water soldier, Water seagreen.*

Fl. white. July. Perennial. Lakes and ditches in east of England.

Used in wound-drinks, refrigerant.

Order 146.—ALISMACEÆ. (De Cand. Bot. Gal. 437. (Endl. Gen. Pl. 127.)

Perigone free, six-partite, coloured; *stamens* 6—9, rarely more; *ovaries, styles,* and *stigmas* 3—6, or more; *capsules* indehiscent, one or many-seeded, two-valved; *embryo* straight, or incurved; *albumen* none. *Aquatic herbs,* with radical, alternate sheathing *leaves*; *flowers* in spikes or umbels; hermaphrodite, rarely monœcious.

ALISMA. (De Cand. Bot. Gal. 437. Endl. Gen. Pl. 127.)

*ALISMA PLANTAGO. (E. B. 837.) *Plantago aquatica, Great water plantain.*

Fl. white, or pale rose coloured. July. Perennial. Margins of lakes and wet places.

Root used in hydrophobia. (G.) It has now fallen into deserved neglect. (O'Sh.)

HYDROGETON. (Lindl. Nat. Syst.)

HYDROGETON FENESTRALIS. *Ouvirandia fenestralis.*

Root bulbous, eaten when roasted. (G.)

SAGITTARIA. (De Cand. Bot. Gal. 438. Endl. Gen Pl. 128.)

*SAGITTARIA SAGITTIFOLIA. (E. B. 84.) *Sagitta aquatica, Arrow head.*

Fl. whitish. July. Perennial. Ditches and margins of rivers.

Herb acrid, opening, and incisive; root bulbous, very nutritive. (G.)

ORDER 147.—POTAMEÆ. (De Cand. Bot. Gal. 439. Endl. Gen. Pl. (*Najadeæ*) 229.)

Flowers hermaphrodite, or of separate sexes; *spathe*, or *perigone*, more or less deeply divided; *ovaries* numerous, definite, inserted on a common receptacle, or in a central spadix; *style* one, or none; *stigma* simple; *stamens* definite in number, inserted on the receptacle, or on the spadix; *capsules* indehiscent, one-celled, one-seeded; *seed* inverse, pendulous; *albumen* none; *embryo* straight, or incurved; *radicle* turned to the point opposite to the hilum. *Aquatic herbs*, with simple, generally alternate *leaves*.

POTAMOGETON. (De Cand. Bot. Gal. 439. Endl. Gen. Pl. (*Najadeæ*) 239.)

*POTAMOGETON NATANS. (E. B. 1822.) *Potamogeton, Sharp-fruited broad-leaved pond weed.*

Fl. June, July. Perennial. Stagnant waters and slow streams.

Cooling, used in itchings, and against old ulcers. (G.)

ZOSTERA. (De Cand. Bot. Gal. 440. Endl. Gen. Pl. 230.)

*ZOSTERA MARINA. (E. B. 467.) *Z. oceanica, Z. trinerva, Alga, Grass wrack.*

Fl. May, September. Perennial. Creeks and salt water ditches.

Cooling, used in inflammations and the gout. The charcoal used in strumous tumours. (G.)

ORDER 148.—PANDANACEÆ. (Endl. Gen. Pl. 242. Lindl. Nat. Syst. 361.)

Flowers diœcious, or polygamous, arranged on a wholly covered spadix; *periant* wanting; *males, filaments* with simple anthers; *anthers* two-celled; *females*, ovaries usually collected in parcels, one-celled; *stigmas* as many as the ovaries, sessile, adnate; *ovules* solitary, erect; *fruit* either fibrous drupes, usually collected in parcels, each one-seeded, or many-celled berries, with polymorphous cells; *albumen* fleshy; *embryo* in its axis erect, (not slit on one side,) plumule inconspicuous; *stem* arborescent, usually sending down aerial roots, sometimes weak and decumbent; *leaves* imbricated in three rows, long, linear, lanceolate, amplexicaul, with their margins almost always spiny; *floral leaves* smaller, often coloured. (L.)

BROCIMUM.

BROCIMUM ALICASTRUM. *Bread nut.* Jamaica. Fruits eatable.

PANDANUS. (Endl. Gen. Pl. 242.)

PANDANUS. . . . . *Vaquois.*

Seeds esculent. (G.) In the Sandwich, and other South Sea Islands, a species of Pandanus is used for making mats; the branches being of a soft spongy juicy nature, cattle will eat them very well, when cut into pieces; they call it *Wharra tree* at Otaheite. (Lou.)

PANDANUS ODORATISSIMUS. *Keora.* India.

Flowers exhale a very pervading perfume; a distilled water is prepared from them, whose properties are gently stimulant and diaphoretic. (O'Sh.)

PHYTELEPHAS. (Endl. Gen. Pl. 243.)

PHYTELEPHAS MACROCARPA. *Calezza de negro.* Tropical America.

PHYTELEPHAS MICROCARPA. *Vegetable ivory.* Tropical America.

Milk of the fruit becomes hard like ivory, and of a fine taste. (G.) Buttons are turned from the hard albumen of Phytelephas, or the Tagua plant. (L.) Used very generally as a substitute for ivory in small turned articles.

ORDER 149.—ORCHIDEÆ. (De Cand. Bot. Gal. 442. Endl. Gen. Pl. 185.)

Perigone monosepalous, petaloid, adhering to the ovary, six-cleft, with irregular segments, three external, called the helmet, and three internal, the five upper ones constitute, as it were, the flower, the lower one being the lip, (labellum,) various in form and direction; *ovary* one-celled, with three parietal placentæ; *style* forming part of the column of the stamens; *stigma* a viscid spot, more or less orbicular, at the base, side, or apex of the columnar style; *filaments* of the stamens three, united with the style into a central column, the lateral ones (except in Cypripedium) sterile, sometimes more or less elongated sometimes very short, or none, the middle one generally antheriferous; *anthers* two-celled, either distinct and adnate to the sides of the style, which is often prolonged beyond them, or approximated, and then the anthers are either parallel to the stigma, immoveable, and persistent, or terminating the column, moveable, in the form of an operculum, and deciduous; *pollen* granular, the grains cohering by means of a glutinous elastic substance, sometimes easily separable, sometimes homogeneous, and concreted into masses; these pollen masses, after the dehiscence of the cells, become attached to the stigma by means of a filiform process of the stigma, or of a glandular viscid retinaculum of the pollen: *capsule* one-celled, three valved, three-carinate, dehiscing laterally; *seeds* numerous, attached to three placentas, which are adnate to the middle of the valves; *testa* loose, reticulated, contracted at each end; *embryo* at the base of a fleshy albumen. *Herbs*, the roots either fasciculated or tuberous, the tubers being ovate or palmate; *stems* rarely divided, furnished with leaves and scales, or naked; *leaves* amplexicaul, entire; *flowers* bracteated, spicate, or solitary, having all their parts inverted, in consequence of the twisting of the ovary.

These plants are esteemed as highly aphrodisiac.

BLETIA. (Endl. Gen. Pl. 194.)

BLETIA VERECUNDA. *Limodorum altum.* West Indies.

According to Browne, the Cormus is "bitterish, and attended by a clamminess that leaves a light prickly warmth behind it; but this wears off soon, leaving the palate free from every sensation but that of the bitter; when dried, it may be used with great propriety as a stomachic. (L.)

[EPIDENDRUM. (Endl. Gen. Pl. 193.)

EPIDENDRUM BIFIDUM. West Indian Islands, &c.

According to Mr. Schomburgk, the expressed juice is a purgative, taken in doses of a table-spoonful at a time; it is also reckoned in Tortola an anthelmintic and diuretic, &c. (L.)

EPIPACTIS. (De Cand. Bot. Gal. 449. Endl. Gen. Pl. 213.)

*EPIPACTIS LATIFOLIA. (E. B. 269.) *Serapias latifolia, Bastard hellebore, Broad-leaved helleborine, helleborine.*

Fl. greenish-purple. July, August. Perennial. Woods in mountainous countries.

*EPIPACTIS OVATA. (E. B. 1548.) *Listera ovata, Ophrys cvata, Common tway blade.*

Fl. yellowish-green. June. Perennial. Woods and moist pastures.

Roots, washed and baked, yield *Salep.* (G.)

EULOPHIA. (Endl. Gen. Pl. 200.)

It appears by the evidence of Professor Royle, that the plant which yields *Salep* in Cachmere, belongs to the present genus, but the specimens obtained by him were not sufficient to enable the species to be ascertained. (L.)

HABENARIA. (Endl. Gen. Pl. 210.)

*HABENARIA BIFOLIA. (E. B. 22.) *Orchis bifolia, Satyrium, Butterfly satyrion, Butterfly orchis.*

Fl. yellowish-white, fragrant. June. Perennial. Moist copses and pastures.

Root yields *Salep.* (G.)

NEOTTIA. (De Cand. Bot. Gal 448. Endl. Gen. Pl. 213.)

*NEOTTIA SPIRALIS. (E. B. 541.) *Ophrys spiralis, Spiranthes autumnalis, Triorchis, Common ladies' traces, Triple ladies' traces.*

Fl. greenish-white, spiral. August, September. Perennial. Chalk hills.

Root yields *Salep.*

ORCHIS. (De Cand. Bot. Gal. 442. Endl. Gen. Pl. 208.)

*ORCHIS FUSCA. (E. B. 16.) *Great brown-winged orchis, Large military goatstones.*

Fl. helmet dark greenish purple; the rest of a paler variegated purple. May. Perennial. Chalky pastures and borders of woods.

Dried leaves have the same scent as the *Tonca bean*, and are used to scent snuff, as are also those of some other species of Orchis. (G.)

*ORCHIS HIRCINA. (E. B. 24.) *Satyrium hircinum, Tragorchis, Lizard orchis, Goat stones.*

Fl. dingy purplish-green; odour hircine. July. Perennial. Chalk hills.

*ORCHIS LATIFOLIA. (E. B. 2308.) *Orchis palmata, Male satyrion, Royal marsh orchis.*

Fl. pale rose-coloured, varying to deep purple. June. Perennial. Marshes and moist meadows.

*ORCHIS MASCULA. (E. B. 631.) *Early purple orchis, Male fool's stones.*

Fl. purple, centre of lip whitish. June. Perennial. Woods and pastures.

*ORCHIS MILITARIS. (E. B. 2675.) *Orchis, Military orchis, French satyrion, Satyrium.*

Fl. helmet pale ash-coloured; lip deep purple, white in the middle. May. Perennial. Chalk hills near Reading.

*ORCHIS MORIO. (E. B. 2059.) *Fool's stones, Green winged meadow orchis.*

Fl. helmet purplish-green; lip purple, pale in the middle, with purple spots. June. Perennial. Meadows and pastures.

*ORCHIS PYRAMIDALIS. (E. B. 110.) *Anacamptis pyramidalis, Cynosorchis, Dog's stones, Pyramidal orchis.*

Fl. delicate rose-purple. July. Perennial. Pastures on a clayey or chalky soil.

Roots washed and baked, *Salep*, are nutritive, restorative, and aphrodisiac; *Salep* forms a stiff jelly with potash, ammonia, or magnesia. (G.) It is believed that some species of this genus furnishes the nutritious substance called *Salep*, or *Saloop*, so remarkable as the source of *Bassorine*, and *O. mascula* in particular has been named as the plant whose tubercles are collected; but as that plant does not grow in Turkey or Persia, the countries whence Salep was originally obtained, there must be some mistake in the statement; it is more likely to be the produce of *O. variegata, taurica*, or *militaris*. In the Himalayas, the tubercles of an orchis were seen by Lieut. Hutton to be collected for use under the name of *Salep misri*, but the species is not mentioned. (L.) SALEP is the prepared and dried roots of several orchideous plants, and is sometimes sold in the state of powder. (Pereira.)

VANILLA. (Endl. Gen. Pl. 221.)

VANILLA AROMATICA. *Epidendron vanilla*. South America.

Pods, *Banilloes, Vanilla*, brown, as thick as a quill, covered with an efflorescence, in bundles of five oz. each, dipped in oil, cephalic, stomachic, used to scent chocolate and liqueurs; *Vanillon*, from the Brazils in iron chests, dark coloured; *Pampova*, from the Spanish colonies, thick; *Simarouba*, from St. Domingo, has scarcely any smell; are probably from different species. (G.) Vanilla is employed in this country for flavouring chocolate, ice creams, &c.; on the continent it is much esteemed as an aromatic stimulant; it has been administered in asthenic fevers, rheumatism, hysteria, impotence of the male, melancholy, &c.; the dose is from eight to twelve grains. (Pereira.)

VANILLA CLAVICULATA. *Epidendrum claviculatum, Greenwithe*. West Indies.

A decoction is esteemed by the negroes an excellent remedy for syphilis; the expressed juice is also used in cases of recent wounds, whence the French in St. Domingo call it *Liane a blessure*. (L. ex Swartz.)

VANILLA POMPONA, V. SATIVA, and V. SYLVESTRIS, are mentioned by Schiede as yielding Vanilla in Mexico.

ORDER 150.—ZINGIBERACEÆ. (Endl. Gen. Pl. 221. Lind. Nat. Syst. 322.)

Calyx superior, tubular, three-lobed; *corolla* tubular, irregular, with six segments in two whorls, the outer three partite, the inner three partite with the intermediate segment, (labellum,) large, and generally three-lobed; *stamens* 1—3, of which the two lateral ones are abortive; *filament* often extended beyond the *anthers*, which is two-celled, and opening lengthwise; *ovary* three-celled; *style* filiform; *stigma* concave, dilated; *fruit* a three-celled capsule, opening by three valves, bearing each a partition on the middle of its inner surface; *seeds* sometimes accompanied with an arillus; *albumen* farinaceous; *embryo* cylindrical; *radicle* turned towards the hilum. *Herbaceous*, tropical, aromatic *plants*, with a creeping *rhizoma*; simple sheathing *leaves*, and *flowers* arising from spathaceous membranous bracteæ.

Roots and seeds mostly aromatic, and used as spices.

ALPINIA. (Endl. Gen. Pl. 224.)

ALPINIA GALANGA. *Amomum galanga*, *Galanga major*, *Maranta galanga*, *Great galangale*. Sumatra.

Root tuberous, covered with rings, brownish, inside dirty white; a faint aromatic smell, tastes like pepper and ginger mixed. (G.) The roots are the *Galanga major* of the druggists, a pungent, acrid aromatic, forming a kind of substitute for ginger. (G.)

ALPINIA . . . . ? *Amomum* . . . . ? *Costus* . . . .? *Galanga minor*, *Small galangale*.

Root warmer and more fragrant than *Galanga major*, outside brown, inside red. In India it is ten times the price of the other; both are warm, stomachic, and emmenagogue. (G.) Besides the larger Galanga, there is a *Galanga minor*, which, according to Fée, is very much smaller, and has more energetic properties than the former, and which comes from China and the Philippines; it is not known what plant produces it. (L.)

ALPINIA EXALTATA. *A. tubulata*, *Renealmia exaltata*.

A plant supposed to be at least related to this, if not identical, and called *Corowatti* in British Guayana, is spoken of by Dr. Hancock as a bitterish, pungent, sub-acrid plant, acting as a diaphoretic and diuretic, or in large doses as an emetic, and of great value in dropsies, rheumatism, dysentery, hooping-cough, &c.; the bruised rhizoma is the part used. (L.)

AMOMUM. (Endl. Gen. Pl. 223.)

AMOMUM ANGUSTIFOLIUM. Madagascar.

Every part, when bruised or wounded, diffuses a strong but pleasant aromatic smell; the fruit is the *Cardamomum majus* of old authors, the great, or *Madagascar cardamom* of Smith; the seeds are said by this latter author to have none of the vehement, hot, acrid taste of *Grains of paradise*. (L.)

AMOMUM AROMATICUM. Bengal.

Fruit similar in quality to *Cardamoms*, for which it is sold to the druggists in India; the seeds are similar in shape and spicy flavour. (L.)

AMOMUM CARDAMOMUM. Java, Sumatra.

Seeds agreeably aromatic; used by the Malays as a substitute for the true cardamoms of Malabar, the produce of *Elettaria cardamomum;* fruit said by Nees and Ebermaier to be the *Round cardamoms* of the shops. According to Smith it is the *Amomum verum* of the old apothecaries. (L.) They are officinal in the French Codex, and are principally consumed in the southern parts of Europe. (Pereira.)

AMOMUM GRANDIFLORUM. Sierra Leone.

Seeds differ from those of *A. grana paradisi* in being grey or lead-coloured, much less polished, with a totally different flavour, resembling that of camphor, which they equal in warmth and pungency; as a stimulant or cordial, these seeds appear equal to any cardamoms whatever. (L. ex Smith.)

AMOMUM GRANA PARADISI. *Grana paradisi, Grains of paradise, Guinea grains, Melligetta,* or *Malaguetta pepper.* Guinea.

Seeds aromatic, stimulant; taste very hot and heating, like pepper; used by some in large doses to cure agues; also to give a false strength to wine, beer, vinegar, and other liquors. (G.) Seeds extremely aromatic, hot, and acrid; properties the same as those of other *Amoma;* they are powerfully aromatic, stimulant, and cordial. (L.)

AMOMUM MACROSPERMUM. *Large-seeded Guinea amomum.* Sierra Leone.

This was mistaken by Gærtner for *Malaguêtta pepper.* (Pereira.)

AMOMUM MAXIMUM. *Great-winged amomum.* Malay Islands, Java.

Yields *Java cardamoms,* which are not used here. When brought to this country they are usually re-shipped for continental uses

AMOMUM MELEGUETA. (Rosc.) Demerara, probably from Africa.

Yields *Grains of Paradise,* and is cultivated by the negroes in Demerara on account of the seeds, which are occasionally supplied to the druggists in George Town as *Guinea grains.* The seeds are identical with the *Grains of Paradise* of English commerce.

COSTUS. (Endl. Gen Pl. (*Scitamineæ*) 225.)

COSTUS ARABICUS. East and West Indies.

Root, *Sweet costus,* aromatic, rather acrid, with the smell of *Orrice,* stomachic, tonic, discussive, becomes bitter by keeping. (G.) The *Putchuk root* of India, although of unknown origin, is usually referred to this plant; it is chiefly exported to China, where it is used as incense. (O'Sh.)

CURCUMA. (Endl. Gen. Pl. 223.)

CURCUMA AMADA. Bengal.

Called by the Bengalees *Amada,* or *Mango ginger,* the fresh root possessing the peculiar smell of a fresh mango. (L.) It is a gentle stimulant, but now only used as an article for seasoning food. (O'Sh.)

CURCUMA ANGUSTIFOLIA. East Indies.

Root nutritive, excellent for sick persons; ground to a flour yields by washing *East Indian arrow root.* (G.) Tubers produce excellent *Arrow root,* sold in the markets of Bernares, and eaten by the natives. (L.) It is bought by the starch makers, and is therefore presumed to be employed in making starch. (Pereira.)

Curcuma leucorhiza. "*Tikor.*" East Indies.

Tubers produce excellent *Arrow root.* (L.)

Curcuma longa. *Curcuma,* κυπειρος ινδικος, (*Diosc.*) *Turmeric.* East Indies.

Roots, *Turmeric,* imported from the East Indies in tubers about the size of the little finger; aromatic, tonic, discussive, and heating; used especially in the jaundice and the itch; dose ʒj. to ʒij, ; dyes a deep yellow, and is used as a seasoning in Indian cookery. (G.) Bitter, aromatic, stimulant, tonic; employed in debilitated states of the stomach, intermittent fever, and dropsy. (Roxb.) Considered by the native practitioners of India an excellent application in powder for cleansing foul ulcers; also used in dyeing. (L.) Formerly much used in cookery to give things a colour; root tinges the urine a deep yellow colour. (Lou.) White paper dyed by an alcoholic tincture of Turmeric is a very sensitive test for alkalies. (O'Sh.)

Curcuma rubescens. Bengal.

The pendulous tubers of this, and several other species of Curcuma, yield a very beautiful, clear, starch-like *Arrow root,* which the natives of the countries where the plants grow, prepare and eat. In Travancore this flower or starch forms a large part of the diet of the inhabitants. (L.)

Curcuma zedoaria. *Amomum zedoaria, Jedwar* or *Zadwar,* (Arab.) *Turmeric Zedoary.* Bengal, China.

Root, *Zedoaria longa, Z. flava, Zedoariæ radix,* fragrant, stimulant, stomachic; gr. x. to ʒss.; and used as a spice. The *Yellow zedoary* dyes a pale yellow. (G.) The *Zedoaria rotunda* of the shops. Employed in cardialgia, colic, cramp in the limbs, torpor of the intestinal canal, &c. The Hindoos use the roots as a perfume as well as medicinally; aromatic, stomachic, carminative, similar in properties to ginger, but less efficient; M. Fée still refers the *Zedoaria rotunda* to *Kœmpferia rotunda,* notwithstanding the express declaration of Roxburgh, that the tubers of that plant possess little or nothing of the sensible properties of *Zedoary.* (L.)

Curcuma zerumbet. *Amomum zerumbet, Broad-leaved ginger, White zedoary.* (G.) East Indies.

The *Zedoaria longa* of the shops; vide *C. zedoaria.* (L.) Powdered and mixed with the powdered wood of *Cæsalpinia saphan* it is copiously thrown about by the Hindoos during their holidays in March. (Lou.)

Elettaria. (Endl. Gen. Pl. 223.)

Elettaria cardamomum. *Alpinia cardamomum, True cardamom.* Malabar.

Capsules, *Lesser cardamoms, Cardamomum minus.* Seeds, *Cardamomi semina,* stimulant, drying, assisting digestion, emmenagogue. (G.) Seeds gratefully aromatic and pungent, with a flavour of camphor, and are esteemed more agreeable and useful in food and medicines than any others of this natural order. They are reckoned carminative and stomachic, and are employed very generally to give warmth to other medicines. According to Mr. White, they are one of the most valuable articles of modern luxury, regarded as a necessary of life by most of the inhabitants of Asia; a grateful and salubrious accessory of diet, &c. They enter into a considerable number of pharmaceutical compounds as adjuvants. (Pereira.)

ELETTARIA MAJOR. *Ceylon elettaria.* Ceylon.

Yields *Ceylon*, or *Wild cardamoms.* Their constituents, as well as their effects and uses, are doubtless analogous to those of the *Malabar cardamoms.* Their commercial value is about one-third that of the latter. (Pereira.)

EMBDLIA.

EMBDLIA SUPERSONATA.

Root used as a spice.

KŒMPFERIA. (Endl. Gen. Pl. 223.)

KŒMPFERIA GALANGA. India.

Roots have an agreeable, fragrant smell, and a somewhat warm, bitterish, aromatic taste; but they are unknown in London, although used medicinally by the Hindoos. (Roxb.) It does not produce the *Galanga major* of the druggists, and seems to have no other right to its specific name than what it derives from its supposed identity with the *Katsjula kelenga* of Rheede. Fée says the roots are the *Radices alpiniæ spuriæ.* True *Galanga* is the produce of *Alpinia galanga*, which see. (L.)

KŒMPFERIA ROTUNDA. India.

Root, *Round zedoary*, *Zedoaria rotunda.* Fragrant, stimulating, stomachic; used as a spice. (G.) This was supposed to produce the *Zedoaries* of the druggists, and Fée continues to refer them to it. But it is clear that *Zedoary* is produced by *Curcuma zedoaria*, which see. (L.)

STISSERA.

STISSERA CURCUMA.

Root used as a spice. (G.)

ZINGIBER. (Endl. Gen. Pl. 223.)

ZINGIBER CASSAMUNAR. East Indies.

Cassamunar root. (G.) Once in great repute as a medicine of uncommon efficacy in hysteric, epileptic, and paralytic disorders, but now out of use. (L.)

ZINGIBER OFFICINALE. *Amomum zingiber*, *Ginger.*

This is the plant that produces *Ginger*, which is prepared from the Rhizoma; the young tender shoots of part this are preserved in sugar, the older are scalded, scraped, dried, and become the *White ginger root* of the shops. If scalded without being scraped, it becomes *Black ginger*, one of the most valuable of aromatics, carminative, stimulant, sialogogue; used in flatulent colic, dyspepsia, gout, debility, and torpor of the system. (L.) Ginger yields a volatile oil, which is pale yellow, lighter than water; in taste very acrid and hot; also a resin, which is yellowish, soft, aromatic, and hot to the taste.

ZINGIBER ZERUMBET. East Indies.

Rhizomata, with an agreeable smell resembling that of ginger, and a hot, bitter, aromatic flavour. (*Radices zerumbethe offic.*,) not now used.

ORDER 151.—CANNACEÆ. (Endl. Gen. Pl. 225. (*Marantaceæ.*) Lindl. Nat. Syst. 324.)

Calyx superior, of three sepals, short; *corolla* tubular, irregular, with the segments in two whorls, the outer three parted, nearly equal; the inner very irregular, one of the lateral segments usually coloured, and formed differently from the rest, sometimes by abortion fewer than three; *stamens* three, petaloid, distinct, of which one of the laterals and the intermediate one are either barren or abortive, and the other lateral one fertile; *filament* petaloid, either entire, or two-lobed, one of the lobes bearing the anther on its edge; *anther* one-celled, opening longitudinally; *pollen* round; *ovary* three-celled, ovules solitary and erect, or numerous and attached to the axis of each cell; *style* petaloid or swollen; *stigma* either the mere denuded apex of the style, or hollow, cucullate and incurved; *fruit* capsular, as in *Scitamineæ: seeds* round, without aril; *albumen* hard, somewhat floury; *embryo* straight, naked, its radicle lying against the hilum. *Herbaceous* tropical *plants*, destitute of aroma; *Rhizoma* creeping, abounding in nutritive fæcula; *stem* often branching; *leaves, inflorescence*, and *flowers*, as in Zingiberaceæ. (L.)

CANNA. (Endl. Gen. Pl. 227.)

CANNA EDULIS. *Achiras.* Peru.

The fleshy tubers are eaten in Peru as potatoes, and contain a large quantity of starch resembling arrowroot. (L.)

CANNA INDICA. *Indian cane.* India.

Seeds, *Indian shot*, cordial, vulnerary. (G.) In the East Indies the seeds of this and other species are sometimes used as shot. (Lou.)

The fœcula of another canna called *C. coccinea*, has been advertised for sale, under the name of "*Tous les mois*," as an excellent sort of *Arrowroot*. (See Morning Chronicle, Aug. 4, 1837.) It is, however, very doubtful whether it is really produced by the *Canna coccinea* of botanists. (L.)

MARANTA. (Endl. Gen. Pl. 226.)

MARANTA ARUNDINACEA. *M. Indica.* West Indies.

Root yields *Indian arrowroot*. (G.) The tubers yield the *Arrowroot of commerce*, one of the lightest and most nutritious vegetable aliments; it was reckoned a powerful alexipharmic, and derives its English name from its reputed property of counteracting the effects of poisoned arrows. (L.)

THALIA. (Endl. Gen. Pl. 226.)

Root used as a spice.

ORDER 152.—MUSACEÆ. (Endl. Gen. Pl. 228. Lindl. Nat. Syst. 326.)

Flowers spathaceous; *perianth* six-parted, superior, petaloid, in two distinct rows, more or less irregular; *stamens* six, inserted upon the middle of the divisions, some often becoming abortive; *anthers* linear, turned inwards, two-celled, often having a membranous petaloid crest; *ovary* inferior, three-celled, many-seeded, rarely three-seeded; *style* simple; *stigma* usually three-lobed; *fruit* either a three-celled capsule, with a loculicidal dehiscence, or succulent and indehiscent; *seeds* sometimes surrounded by hairs, with an integument which is usually crustaceous; *embryo* in the axis of mealy albumen. *Stemless* or nearly *stemless plants*: *leaves* sheathing at the base, and forming a kind of spurious stem, often very large, their limb separated from the taper petiole by a round tumor, and having fine parallel veins diverging regularly from the midrib towards the margin.

HELICONIA. (Endl. Gen. Pl. 228.)

HELICONIA PSITTACORUM. West Indies.

Root eatable.

MUSA. (Endl. Gen. Pl. 228.)

MUSA PARADISAICA. *Musa, Plantain tree.* India.

Long says, this fruit and the *Banana* are among the greatest blessings bestowed by Providence upon the inhabitants of hot climates. Three dozen *Plantains* are sufficient to serve one man for a week instead of bread, and will support him much better. (Lou.)

MUSA SAPIENTUM. *Banana.* West Indies.

Fruit very nutritive, supposed to be the original and proper food of man, eaten either baked whole, or with milk and sugar, or sliced and stewed. (G.) The plants of this order are valuable, not only as food, but for the many domestic purposes to which the leaves, &c., are applied; some of them yield a most valuable flax, from which some of the finest muslins of India are prepared; the young shoots of the banana are eaten as a delicate vegetable. (L.)

ORDER 153. IRIDEÆ. (De Cand. Bot. Gal. 451. Endl. Gen. Pl. 164.)

Perigone tubular at the base, adhering to the ovary, petaloid, six-cleft, or six-parted, often irregular; *stamens* three, inserted into the base of the outer segments of the perigone; *anthers* linear, dehiscing externally; *ovary* 1—3 celled, many-ovuled, the ovules in two rows; *style* one, or none; *stigmas* three, simple, or laciniated, membranaceous, or petaloid; *capsule* three-celled, three-valved, the valves septiferous in the middle, many-seeded; *seeds* attached to the inner angle of the cell; *embryo* within the fleshy or bony *albumen*. *Herbs* with tuberous *roots*, and often underground *stems* or *rhizomes*; *leaves* alternate, ensiform, or linear, equitant.

Crocus. (De Cand. Bot. Gal. 453. Endl. Gen. Pl. 169).

Crocus odorus. Sicily.

Yields *Saffron* in Sicily, according to Gussone. (L.)

*Crocus sativus. (E. B. 343.) *Crocus, Saffron crocus.*

Fl. September. Perennial. Meadows in eastern counties.

Root has been proposed to be made into bread in times of scarcity; summits of the pistils dried, *Hay saffron, Crocus in fœno, Croci stigmata,* cordial, emmenagogue, anodyne, and exhilarant; dyes a fine yellow; used in cookery to colour rice, &c. *Cake saffron, Crocus in placenta,* formerly, and still, in some countries, esteemed the best, being now reduced with marygold flowers and those of *Bastard saffron,* or *Safflower;* which is perhaps the true explanation of the very different effects ascribed to saffron by medical practitioners. (G.) The dried stigmata are the *Saffron* of the shops. In moderate doses this substance stimulates the stomach, and in large quantities excites the vascular system; moreover it seems to have a specific influence on the cerebro-spinal system, as it affects, it is said, the mental faculties, a result which De Candolle considers analogous to that produced by the petals of certain odorous flowers. In modern practice it is but little used except as a colouring ingredient; on the continent it is employed as an agreeable stimulant in many culinary preparations and liqueurs; in a medicinal point of view, it is frequently used to assist the eruption of exanthematous diseases, on the same principle, I fancy, that bird-fanciers give it to birds in the moult; it has been used as a carminative, antispasmodic, and emmenagogue. (Pereira.) The singular substance called *Polychroite* is obtained from saffron.

Gladiolus. (De Cand. 452. Endl. Gen. Pl. 168.)

**Gladiolus communis. *Corn flag.*

Fl. rose-coloured. June, July. Perennial. Native of the South of Europe.

Root has the same qualities as that of *Iris pseudacorus,* but is weaker. (G.)

Iris. (De Cand. Bot. Gal. 451. Endl. Gen. Pl. 166.)

*Iris fœtidissima. (E. B. 596.) *Gladwine, Roast-beef plant, Stinking gladwyn.*

Fl. dull livid purple. May, June. Perennial. South of England.

Juice of the root sternutatory, useful also in dropsy and scrofula. (G.)

Iris florentina. *Florentine orris.* South of Europe.

Fresh root a drastic hydragogue; when dried, sialogogue, errhine; used to give a violet scent to oils; cut into peas to keep open issues. (G.) The dried rhizoma is the *Orris root* of the shops, a subacid, aromatic, rather bitter substance, employed in the manufacture of tooth-powder and hair-powder, and to keep up the discharge from issues. (L.)

**IRIS GERMANICA. *Iris vulgaris, Common fleur-de-luce.*

Fl., outer segments purple, with a yellow beard, the inner ones light blue. June. Perennial. Native of the South of Europe.

Fresh root hydragogue, errhine; externally repels eruptions.

*IRIS PSEUDACORUS. (E. B. 578.) *Acorus adulterinus, Gladiolus luteus.*

Fl. yellow. June, July. Perennial. Watery places.

Root a nauseous drastic purgative, but used in dropsies when other medicines fail; seeds roasted make coffee. (G.) The rhizoma is acrid, and possesses purgative and emetic qualities. (L.)

The Levant.

IRIS TUBEROSA.

Root incisive and purgative; considered by some as *hermodactyles.* (G.)

United States.

IRIS VERSICOLOR. *Blue flag.*

Root hydragogue, other properties the same as *I. tuberosa.* (G.) Rhizoma nauseous and acrid; it is an active cathartic, but is apt to produce a distressing nausea like sea-sickness, with a prostration of strength; most useful as a diuretic. (L. ex Bigelow.)

ORDER 154. AMARYLLIDEÆ. (De Cand. Bot. Gal. 454. Endl. Gen. Pl. 174.)

Perigone monophyllous, tubular, adhering to the ovary, six-parted, æstivation imbricated, three outer segments of the same size as the inner ones; *stamens* six, filaments free or united; *anthers* introrse; *ovary* inferior, three-celled, cells many-seeded; *style* simple; *stigma* three-lobed; *capsule* three-valved, valves septiferous in the middle, many-seeded, or a berry, 1—3 seeded; *albumen* fleshy; *embryo* straight; *radicle* directed towards the umbilicus; *roots* bulbous, or fibrous; *flowers* umbellate, or solitary.

ALSTRŒMERIA. (Endl. Gen. Pl. 180.)

South America.

ALSTRŒMERIA EDULIS.

Furnishes tubers filled with a nutritious fæcula. (L.)

Peru.

ALSTRŒMERIA LIGTU.

Peru.

ALSTRŒMERIA PELEGRINA.

ALSTRŒMERIA REVOLUTA.

Roots yield an esculent farina called *Liuta.*

South America.

ALSTRŒMERIA SALSILLA.

Said to be diuretic and diaphoretic. (L.) Cultivated in

Peru and the West Indies for its roots, which are used like the tubers of the potatoe. (Lou.)

BRUNSVIGIA. (Endl. Gen. Pl. 176.)

BRUNSVIGIA TOXICARIA. *Amaryllis disticha*, *Buphane toxicaria*, *Hæmanthus toxicarius*. Cape of Good Hope.

The viscid juice of the bulbs is a dangerous poison. It is one of the ingredients used by the bushmen to envenom their arrows, and is supposed to add most powerfully to the activity of the poison. (L.)

CRINUM. (Endl. Gen. Pl. 177.)

CRINUM ASIATICUM. *C. toxicarium*. East Indies.

The bulbs are powerfully emetic; they are used to produce violent vomiting in cases of poisoning by the *Antiaris*. (L.) In moderate doses it acts as a certain and mild emetic, without griping, purging, or any other distressing symptoms. Roots when dried emetic, but a double dose is required. (O'Sh.)

NARCISSUS. (De Cand. Bot. Gal. 454. Endl. Gen. Pl. 179.)

*NARCISSUS POETICUS. (E. B. 275.) *Narcissus*.

Fl. white, with a deep reddish orange-coloured border to the nectary. May. Perennial. Norfolk and Kent.

Root emetic; used also as a dressing to burns. (G.) The bulbs have considerable energy as emetics; they are administered occasionally on the continent in doses of 5—10 grains to produce nausea, and of 30 grains as an emetic; in the form of an extract, this and other species have been regarded almost as a specific, in cases of hooping-cough, in doses of two or three grains; but although the extract appears sometimes to act with surprising rapidity, effecting a cure in five or six days, yet it frequently fails, and is thought to be less efficacious than *Belladonna*. In doses of 2—3 drachms, the extract is a deadly poison. (L.)

*NARCISSUS PSEUDO NARCISSUS. (E. B. 17.) *Daffodil*.

Fl. large, yellow. March, April. Perennial. Woods and meadows.

Properties the same as those of *N. poeticus*. (G. and L.) The flowers are said to be emetic. (L.)

NARCISSUS TAGGETTA, N. ODORUS, and possibly many other species, have probably similar properties. (L.)

OPORANTHUS, (Endl. Gen. Pl. (*Sternbergia*,) 175.)

OPORANTHUS LUTEUS. South of Europe.

Has purgative bulbs. (L.)

PANCRATIUM. (De Cand. Bot. Gal. 454. Endl. Gen. Pl. 179.)

PANCRATIUM MARITIMUM. South of Europe.

Reported to be emetic. (L.)

ORDER 155. TACCACEÆ. (Endl. Gen. Pl. 159.)

Flowers hermaphrodite; *stamens* six, inserted at the base of the divisions of the limb; *filaments* petaloid, concave, or cucullate at the apex; *anthers* introrse, bilocular, free, erect or inflexed, dehiscing longitudinally; *ovary* adhering to the base of the tube of the corolla, one or imperfectly three-celled, having three parietal placentæ; *ovules* numerous, arranged on the placentæ in rows, placed either vertically or horizontally; *berry* unilocular or semitrilocular, many-seeded; *seeds* numerous, ovate, angulate, or lunate. *Scapigerous perennial herbs, roots* tuberous; *leaves* all radical, petiolate, the petioles half sheathing at the base, either whole, palmate, or bepinnatifid, veiny; *inflorescence* umbellate.

TACCA. (Endl. Gen. Pl. 159.)

TACCA PINNATIFIDA. Molucca Isles, and Islands of the Pacific Ocean.

The tuberose and fleshy roots, which are intensely bitter and acrid, contain a nutritious fecula, which, at Tahiti, (Otaheite,) is collected, and has been imported into England under the name of *Tahiti arrow-root*, or *Otaheite salep*. (Pereira.)

ORDER 156. DIOSCOREÆ. (Endl. Gen. Pl. 157. Lindl. Nat. Syst. 357.)

Flowers diœcious; *calyx* and *corolla* confounded, superior. *Males: stamens* six, inserted into the base of the sepals and petals. *Females: ovary* three-celled, with one or two seeded cells; *style* deeply trifid; *stigmas* undivided; *fruit* leafy, compressed, with two of its cells sometimes abortive, occasionally succulent; *seeds* flat, compressed; *embryo* small, near the hilum, lying in a large cavity of cartilaginous albumen. *Twining shrubs: leaves*, alternate, occasionally opposite, with reticulated veins; *flowers* small, spiked, with from one to three bracts each. (Lindl.)

DIOSCOREA. (Endl. Gen. Pl. 158.)

DIOSCOREA ALATA. *Negro yam, White dry yam.* India.
DIOSCOREA BULBIFERA. *Ceylon white yam.* East Indies.
DIOSCOREA PURPUREA. *Purple yam.* West Indies.
DIOSCOREA SATIVA. Malabar.
DIOSCOREA TRIPHYLLA. *Yam pee.*

Roots very large, tuberous, farinaceous, esculent; and made also into *Sago*. (G.) The large, fleshy, mucilaginous, sweetish tubers, called yams, form an important article of food in all tropical countries. (Lou.)

ONCUS. (Endl. Gen. Pl. 158.)

ONCUS ESCULENTUS. *Oncorhiza esculenta.*

Root similar to that of *Dioscorea*, and has the same properties. (G.)

TAMUS. (De Cand. Bot. Gal. (*Liliaceæ*) 416. Endl. Gen. Pl. 158.)

*TAMUS COMMUNIS. (E. B. 91.) *Brionia nigra, Black bryony.*

Fl. greenish white. June. Perennial. Hedges and thickets.

Root diuretic, incisive, and opening, externally resolvent; young shoots eaten as asparagus. (G.) The tubers of the root are so acrid, that the pulp was formerly used as a stimulating plaister. The Moors eat the young shoots boiled with oil and salt. (Lou.)

ORDER 157.—SMILACEÆ. (Lindl. Nat. Syst. Endl. Gen Pl. 152.)

Flowers hermaphrodite, or diœcious; *calyx* and *corolla* confounded, inferior, six-parted; *stamens* six, inserted into the perianth near the base, seldom hypogynous; *ovary* three-celled, the cells one or many-seeded; *style* usually trifid; *stigmas* three; *fruit* a roundish berry; *albumen* between fleshy and cartilaginous; *embryo* usually distinct from the hilum. *Herbaceous plants* or *under shrubs,* with a tendency to climb; *stems* woody; *leaves* reticulated.

SMILAX. (Endl. Gen. Pl. 155.)

SMILAX ASPERA. *Rough bind weed.* South of Europe, Barbary.

Indian sarsaparilla has been supposed to be produced by this plant, but there is no good authority to show that the rhizoma possesses active properties, neither does it grow in India. It is used in the south of Europe as a substitute for sarsaparilla. *Indian sarsaparilla* is produced by *Hemidesmus indicus,* an asclepiadaceous plant, which see.

SMILAX CHINA. *China, Tsinaw.* China.

Roots yield half their weight of a reddish *Sago;* imported from the East Indies. (G.) The rhizoma forms one of the *China roots* of the shops; it is recommended as a substitute for *Sarsaparilla;* the Chinese eat it under the idea that it invigorates them. (L.)

SMILAX GLABRA. Sylhet.

Roxburgh says that the rhizoma is not to be distinguished by the eye from the medicinal drug brought from China; the natives of Sylhet use a decoction of the fresh root annually, for the cure of sores and of venereal complaints. (L.)

SMILAX GLAUCA. Brazil.

According to Martius, the woody knotty root of this plant is called in Brazil *Raiz da China branca e rubra,* also *Japicànga,* or *Inhapécánga;* the Brazilians consider it a specific against syphilis, but besides this it is much recommended for gout and chronic cutaneous eruptions. In using this remedy it is taken for granted that the patient will submit to drink an enormous quantity. (L.)

SMILAX GLYCYPHYLLA. New Holland.

Fée says that the leaves of this have been introduced into practice under the name of *Sweet tea;* the infusion is sweet at first, and bitter afterwards; it is tonic and antiscorbutic. (G.)

SMILAX LANCEÆFOLIA. Bengal.

The large tuberous rhizomata are much used by the natives of India, and are not to be distinguished from *China roots;* the juice of the fresh tuber is taken inwardly for the cure of rheumatic pains, and the refuse, after extracting the juice, is laid over the parts most painful. (L. ex. Roxb.)

SMILAX MEDICA. Mexico.

This is undoubtedly the species that produces the Vera Cruz *Sarsaparilla;* Schiede, who found it on the eastern slope of the Mexican Andes, says it is carried from the villages of Papantla, Tuspan, Nantla, Misantla, &c., to Vera Cruz, under the name of *Zarzaparilla*, and is then introduced into the European market; he was told that the roots were gathered all the year long, dried in the sun, and then tied in bundles for sale. (L.) Vera Cruz Sarsaparilla is the produce of this species. (Pereira.)

SMILAX OFFICINALIS. South America.

This is called *Sarsaparilla* by the natives of the banks of the Magdalena, who, according to Humboldt and Bonpland, send great quantities to Carthagena and Mompox, whence it is shipped for Jamaica and Cadiz. (L.) It is probably the source of *Jamaica*, and perhaps also of *Lima* and *Honduras sarsaparillas*. (Pereira.)

SMILAX PSEUDO CHINA. *Bastard china, Bastard ipecacuanha, Wild yam.* South of United States.

American china root is reported to belong to this plant, but it is very doubtful whether this ever comes into the drug market; several species seem to be mixed together by this name; Elliot says he believes this to be the one generally preferred in medicine as an alterative, and that it forms the basis of many diet drinks among the unlicensed faculty. From the tubers, with maize, sassafras, and molasses, the negroes of Carolina manufacture a very pleasant beer. (L.)

SMILAX PURHAMPUY. Peru.

The roots of this species are highly extolled by Ruiz, who calls it *China peruviana*, as one of the very best kinds of *Sarsaparilla;* Lindley asks, "Is not this the same as S. officinalis?" (L.)

SMILAX SARSAPARILLA. United States.

There is no good authority for this plant furnishing any of the sarsaparilla of commerce; nothing is known in the United States of its possessing any medicinal properties, and it is probable that the opinion of its being the source of the drug has originated in some mistake. (L.) There is no evidence that it yields any of the Sarsaparilla of the shops, yet Martius ascribes the Vera Cruz variety to it. (Pereira.)

SMILAX SYPHILITICA. Tropical America.

In South America a kind of *Sarsaparilla* is produced by the roots of this, which is held in the highest estimation. (L.) This was considered by Dr. Pereira and others to be the source of *Lisbon* or *Brazilian Sarsaparilla*, but that variety is now ascribed to *Smilax papyracea.*

SMILAX PAPYRACEA. (Poiret.) Brazil.

It appears from the researches of Martius and Grisebach, that the *Lisbon* or *Brazilian Sarsaparilla* is obtained from this species, which grows principally in the regions bordering on the river Amazon, and on the banks of most of its contributory streams.

ORDER 158. LILIACEÆ. (De Cand. Bot. Gal. 461. Endl. Gen. Pl. 139.)

Flowers hermaphrodite; *perigone* petaloid, free, often tubular, six-cleft, or six-parted, the segments disposed in a double row; *stamens* six, opposite to the segments of the perigone, and generally adnate to them; *ovary* one, free, sessile, three-sided, with many ovules, the ovules arranged longitudinally in two rows; *style* one, longitudinally trisulcate, rarely wanting; *stigmas* three, or one, three-sided; *capsule* three-celled, three-valved, the valves septiferous in the middle; *seeds* many, attached to the internal angle of the cell, and covered with a crustaceous, membranous, or spongy integument; *embryo* within a cartilaginous or fleshy albumen; the *radicle* turned towards the hilum. *Herbs* either *bulbous* with radical *leaves*, or *caulescent*, with the *stem leaves* sheathing or sessile.

ALETRIS. (Lindl. Nat. Syst. 451. Endl. Gen. Pl. (*Hæmodoraceæ*) 172.)

ALETRIS FARINOSA. United States.

One of the most intense bitters known. Used in infusion as a tonic and stomachic; large doses produce nausea, and tendency to vomit; has been employed in chronic rheumatism.

ALLIUM. (De Cand. Bot. Gal. 468. Endl. Gen. Pl. 146.)

*ALLIUM AMPELOPRASUM. (E. B. 1657.) *Scorodoprasum, Great round-headed garlick, Wild leek.*

Fl. purplish-white. August. Perennial. Holme's island in the Severn. Rare.

Leaves partake of the properties of garlic and leeks. (G.)

*ALLIUM ARENARIUM. (E. B. 1358.) *Porrum vitigineum, Sand garlic, Vine leek.*

Fl. purple. July. Perennial. Mountainous woods and fields, on sandy soil, in the north of England.

Leaves more heating than leeks; diuretic and emmenagogue. (G.)

**Allium ascalonicum. *Shallot.*

Fl. July. Perennial. Cultivated in kitchen gardens. Native of Asia.

Bulb used as a sauce.

**Allium cepa. *Cepa, Onion.*

Fl. light purple. July. Biennial. Egypt?

Bulb esculent; the juice, when fermented, forms vinegar, holding manna in solution. (G.) The onion is stimulant, diuretic, expectorant, and rubefacient; the juice is sometimes given, made into a syrup with sugar, in infantile catarrhs and croup, in the absence of much inflammatory action; it is also recommended in dropsy and calculous disorders; roasted and split, it is sometimes applied as an emollient poultice to suppurating tumours. (L.)

Allium contortum. *Rocambole, Viper's garlic.*

Bulbous heads used in sauces, milder than garlic. (G.)

Allium fistulosum. *Welsh onion.* Siberia.

Bulbs and young leaves used in salads. (G.)

Allium hirsutum. *Moly of Dioscorides.* South of Europe.

Bulb in a pessary used in prolapsus of the womb. (G.)

Allium magicum. *Victorialis, Spotted ramsons.* Austria.

Bulbs heating, used also for an amulet, preserving against spectres and infected air, probably inspiring courage by their stimulant qualities. (G.)

Allium nigrum. *Moly of Homer.* Barbary.

Properties and uses like those of A. hirsutum.

*Allium oleraceum. (E. B. 488.) *Streaked field garlic, Wild garlic.*

Fl. greenish. July. Perennial. Borders of fields.

Bulb diuretic.

**Allium porrum. *Porrum, Leek.*

Fl. white or purple. July, August. Biennial. Native of Switzrland.

Bulb, expectorant, stimulant, and contains a little sulphur; juice a powerful diuretic, dissolving the calculi formed of the earthy phosphates. (G.)

**Allium sativum. *Allium, Garlic.*

Fl. whitish-purple. August. Perennial. Native of south of Europe.

Bulbs, esculent, strong-tasted, stimulating, used in sauces. (G.) The bulbs act as a local irritant, and, when taken nto the stomach as a stimulant, expectorant, and diuretic;

they have been used in dropsies, and as an anthelmintic; steeped in rum, they form a favourite remedy among country people for the hooping-cough; the infusion is rubbed night and morning into the skin of the patient's loins; a clove of garlic, and a few drops of the juice introduced into the ear, are said to prove highly efficacious in atonic deafness. (L.)

*ALLIUM SCHÆNOPRASUM. (E. B. 2441.) *The Chive.*

Fl. purplish. July. Perennial. Meadows and pastures.

Young leaves used as salads.

*ALLIUM URSINUM. (E. B. 122.) *Ramsons.*

Fl. white. June. Perennial. Moist woods and hedge banks.

Infused in brandy used in gravelly complaints. (G.)

*ALLIUM VINEALE. (E. B. 1974.) *Crow garlic.*

Fl. reddish, keels green. June. Perennial. Corn-fields and waste places.

Bulbs diuretic.

ALOE. (Endl. Gen. Pl. 143.)

ALOE ARBORESCENS. Cape of Good Hope.
ALOE COMMELYNI. Cape of Good Hope.
ALOE MITRIFORMIS. Cape of Good Hope.

Said to be collected for the preparation of Cape aloes. (L.)

ALOE INDICA. (Roxb.) East Indies.

Produces *Cape aloes*, and the coarse variety called the fœtid, *Caballine*, or *horse aloes.* (O'Sh.) Pereira supposes a part of the Indian aloes to be the produce of this plant.

ALOE PURPURASCENS. Cape of Good Hope.

Considered by some botanists as a variety of A. socotrina; stated by Theodore Martius to produce *Socotrine aloes.* (L.)

ALOE SOCOTRINA. *A. perfoliata*, *A. vera.* Socotra.

Socotrine aloes, the best of all for medical purposes, are produced by the succulent leaves of this. The drug is imported from Smyrna and Bombay in skins, chests, and casks, is of a reddish brown colour, glossy and pellucid, with a smooth conchoidal fracture. Its taste is very bitter, and the odour pleasant and aromatic. *Mocha aloes*, and genuine *Hepatic aloes*, are supposed to be varieties of the same species. (L.)

ALOE SPICATA. Cape of Good Hope.

Said to yield *Socotrine* and *Cape aloes.* (G.) This is said to be the principal source of *Cape aloes*, a sort having a more strong and disagreeable odour than *Barbadoes aloes. Horse aloes* are supposed to be produced from the same species, and to owe their difference to being obtained by boiling the leaves that have been previously used for producing a finer sample. (L.)

ALOE VULGARIS. *A. barbadensis*, Αλοη, (*Diosc.*) East Indies.

This yields what are called *Barbadoes aloes*, or *Hepatic aloes*, by some writers, but not the true *Hepatic aloes*. It is imported in gourds from Jamaica and Barbadoes, is of a dark brown or black, varying to reddish brown, or liver colour, and has an unpleasant odour. (L.) The use of aloes has been advised in loss of appetite and dyspepsia, in habitual costiveness, to excite the menstrual discharge, to reproduce the hæmorrhoidal discharge, to promote the secretion of bile in certain cases, in cerebral affections, and as an anthelmintic; it is usually administered in the form of pill; the ordinary dose is five grains, but ten, fifteen, and even twenty grains, are sometimes given. (Pereira.) Its use is highly improper in stricture of the rectum, inflammatory states of the bowels, during pregnancy, and in persons liable to over profuse menstrual or hæmorrhoidal discharges. (O'Sh.)

ANTHERICUM. (Endl. Gen. Pl. 148.)

ANTHERICUM LILIASTRUM. *Phalangium*, *Spider wort*. Savoy.

Leaves, flowers, and seeds, used against bites of scorpions; bulbs similar to those of squills. (G.)

ASPARAGUS. (De Cand. Bot. Gal. (*Asparageæ*) 458. Endl. Gen. Pl. 151.)

*ASPARAGUS OFFICINALIS. (E. B. 339.) *Asparagus*.

Fl. greenish-white. August. Perennial. South coast of England.

Diuretic, one of the five opening roots; young shoots eaten as a dainty, but produce in some bloody urine, and accelerate fits of the gout. (G.)

ASPARAGUS PETRÆA. *A. cutifolia*, *Corruda*, *Rock sparrow grass*.

Root opening, diuretic, lithontriptic; roots nutritive. (G.)

ASPHODELUS. (De Cand. Bot. Gal. 463. Endl. Gen. Pl. 147.)

ASPHODELUS LUTEUS. *A. verus luteus*, *Hasta regia*, *King's spear*. Sicily.

ASPHODELUS RAMOSUS. *A. verus albus*, *White asphodel*. South of Europe.

Roots diuretic. (G.)

BULBINE. (De Cand. Bot. Gal. (*Phalangium*) 464.)

BULBINE PLANIFOLIA. *Anthericum bicolor*, *Phalangium bicolor*. France.

Bulbs purgative, may be used for jalap. (G.) Has purgative roots, according to De Candolle. (L.)

CONVALLARIA. (De Cand. Bot. Gal. 459. Endl. Gen. Pl. (*Smilaceæ*) 154.)

*CONVALLARIA MAJALIS. (E. B. 1035.) *Convallium majalis*, *Lilium convallium*, *Lily of the valley*.

Fl. white. May. Perennial. Woods and coppices.

Flowers cephalic, in doses of ʒj., or dried, and used as a sternutatory. (G.) An extract, prepared from the flowers, or from the roots, partakes of the bitterness, as well as of the purgative properties of aloes. A beautiful and durable green colour may be prepared from the leaves with lime. (Lou.)

*CONVALLARIA POLYGONATUM. (E. B. 280.) *Polygonatum, Sigillum salomonis, Solomon's seal.*

Fl. greenish-white. May, June. Perennial. Woods in Kent, &c.

Rhizoma vulnerary, astringent, diuretic; used in a recent state as a cataplasm to take away the marks of bruises; berries, flowers, and leaves, acrid and poisonous. (G.)

DRACÆNA. (Endl. Gen. Pl. 151.)

DRACÆNA DRACO. *Asparagus draco.* Canary Islands, East Indies.

Yields by incision the purest *Dragon's blood.* (G.) *Dragon's blood*, a tonic astringent resin, sometimes employed in diarrhœa and passive hæmorrhages; is yielded in part by this tree, from the surface of the leaves, and from the cracks in its trunk. (L.)

DRACÆNA FERREA. China.

DRACÆNA TERMINALIS.

Roots used in diarrhœa. (G.) Are said to have astringent roots, found useful in dysentery. (L.)

ERYTHRONIUM. (De Cand. Bot. Gal. 463. Endl. Gen. Pl. 139.)

ERYTHRONIUM AMERICANUM. *E. lanceolatum.* United States.

Erythronium, P. U. S., root used for squills. (G.) The fresh root emetic in doses of twenty-five grains; leaves said to be more active than the root. (L.)

ERYTHONIUM DENS CANINUS. *Dens caninus, Dog's tooth violet.* South of Europe.

Root eases the colic, and is used in epilepsy and tinea. (L.)

HERRERIA. (Endl. Gen. Pl. (*Smilaceæ*) 156.)

HERRERIA SALSAPARILHA. Brazil.

Employed in Brazil as *Sarsaparilla.* (L.)

HYACINTHUS. (De Cand. Bot. Gal. 465. Endl. Gen. Pl. 144.)

*HYACINTHUS NON SCRIPTUS. (E. B. 162.) *Blue bell, ~~Hare bell~~, Wild hyacinth.*

Fl. blue. May. Perennial. Woods, copses, and under hedges.

Root astringent, yields a gum. (G.)

LEDBOURIA. (Endl. Gen. Pl. (*Melanthaceæ*) 136.)

LEDBOURIA HYACINTHOIDES. *Erythonium Indicum, East Indian squills.*

Bulb used for squills. (G.) According to Theodore Martius, the bulbs are used as a substitute for *Squills* in the East Indies. Ainslie states that they are employed in cases of stranguary and fevers in horses. (L.)

LILIUM. (De Cand. Bot. Gal. 462. Endl. Gen. Pl. 141.)

LILIUM BULBIFERUM. *Hemerocallis, Orange lily, Red lily.* South of Europe.

Root cathartic; leaves cooling.

LILIUM CANDIDUM. *L. album, White lily.* Asia.

Bulb roasted is emollient and ripening; employed as an emollient cataplasm. (G.)

LILIUM MARTAGON. *Martagon, Turk's cap lily.* The Alps.

Root diuretic and emmenagogue. (G.)

MAYANTHEMUM. (De Cand. Bot. Gal. 459. Endl. Gen. Pl. (*Smilaceæ*) 154.)

MAYANTHEMUM BIFOLIUM. *Convallaria bifolia, Monophyllon, One blade.* South of France.

Flowers alexiterial. (G.)

METTRONICA. (Endl. Gen. Pl. 141.)

METTRONICA SUPERBA. *Gloriosa superba.* East Indies.

Root an active purgative. (G.) Has a root which is said to be a most violent poison. (L.)

MUSCARI. (De Cand. Bot. Gal. 466.)

MUSCARI AMBROSIACUM. *Bulbus vomitorius, Hyacinthus muscari, Muse grape flower.* South of France.

Root emetic; used in diseases of the bladder. (G.)

ORNITHOGALUM. (De Cand. Bot. Gal. 467. Endl. Gen. Pl. 146.)

*ORNITHOGALUM UMBELLATUM. (E. B. 130.) *Ornithogalon, Star of Bethlem.*

Fl. greenish, with a white margin. April, May. Perennial. Meadows, &c.

Root eaten raw and dressed; seeds used to season bread. (G.)

POLIANTHES. (De Cand. Bot. Gal. 472. Endl. Gen. Pl. 142.)

POLIANTHES TUBEROSA. *Tuberose.* South America.

Roots emetic; used also as a dressing to burns. (G.)

RUSCUS. (De Cand. Bot. Gal. (*Asparageæ*) 468. Endl. Gen. Pl. (*Smilaceæ*) 155.)

*RUSCUS ACULEATUS. (E. B. 560.) *Bruscus, Ruscus, Butcher's broom, Knee holly.*

Fl. very small, whitish, arising from the middle of the leaves. March, April. Perennial. South of England.

Roots and berries opening; seeds roasted for coffee. (G.)

Ruscus hypoglossum. *Hippoglossum, Bislingua, Horse-tongue.* Italy.

Ruscus hypophyllum. *Laurus alexandrina, Alexandrian bay.* Italy.

Roots cathartic. (G.)

Squilla. } De Cand. Bot. Gal. 464. Endl. Gen. Pl. 146.
Scilla. }

Squilla indica. India.

The taste of the bulb is fully as nauseous and bitter as that of S. maritima; it is doubtful, however, whether this plant is really of this genus. (L.)

Squilla lilio hyacinthus. South of France.

Bulb used as a purgative. (G.)

Squilla maritima. *Scilla, Squill.* Σκιλλα (*Dioscorides.*) South of Europe.

Bulb, acrid, bitter, nauseous and emetic, powerfully incisive, diuretic, and expectorant; dose of the fresh bulb, gr. v. to gr. xv., of the dried, gr. j. to gr. iij. twice a day. (G.) The bulbs contain an active principle called *Scillitin,* and have been officinal from a very remote period. They are very acrid, and capable of vesicating. Squills are used medicinally as an emetic medicine in hooping-cough and croup, as a diuretic in dropsies, and in chronic pulmonary affections, such as chronic catarrh, humid asthma, winter cough, &c.; they are also employed as an expectorant. In commerce there are two sorts, the red and the white, which appear to be mere varieties, differing in the colour of the bulbs; the dry external scales of the bulb, and the young and tender interior ones, are inert, or nearly so, and should be rejected; the intermediate scales are, for obvious physiological reasons, the part in which the energy of the plant principally resides. (L.)

Squilla pancration. Πανκρατιον (*Dioscor.*) South of Europe.

Believed by M. Steinheil to be the true *Pancration* of Dioscorides, which, according to that author, was very like squills in its effects, but milder. (L.)

Tulipa. (De Cand. Bot. Gal. 461. Endl. Gen. Pl. 139.)

Tulipa gesneriana. *Tulipa, Tulip.* The Levant.

Bulb nutritive.

Xanthorrhœa. (Endl. Gen. Pl. 152.)

Xanthorrhœa arborea. New Holland.

A red resin, called *Black-boy resin,* is probably obtained from this tree. (Pereira.)

XANTHORRHŒA HASTILIS. New Holland.

XANTHORRHŒA RESINOSA. *Acaroides resinifera, Grass tree.* New Holland.

Yield *Yellow resin.* (G.) Commonly called *Botany Bay* or *New Holland gum.* It has been used in the form of tincture, with opium, in fluxus hepaticus, and diarrhœa. (Pereira.)

YUCCA. (Endl. Gen. Pl. 144.)

YUCCA GLORIOSA. *Yucca, Indian bread plant. Adam's needle.* America.

Root yields *Cassava,* or *Indian bread.*

ORDER 159. BROMELIACEÆ. (De Cand. Bot. Gal. 472. Endl. Gen. Pl. 181.)

Perigone tubular, either adhering to the ovary, or free, six-cleft, or six-parted, the segments disposed in a double row, the three external ones short, persistent, caliciform; the three internal ones larger, generally caducous, petaloid; *stamens* six, inserted beneath the perigone; *ovary* three-celled, many-ovuled; *style* simple; *stigma* three-lobed; *fruit* capsular, or succulent, three-celled, many-seeded: *embryo* elongated, recurved, lying in the base of mealy albumen. *Stemless,* or *short-stemmed plants,* their stems sometimes composed of fibrous *roots,* consolidated round a slender centre; *fruit* sometimes eatable.

AGAVE. (De Cand. Bot. Gal. 442. Endl. Gen. Pl. *Amaryllideæ*) 181.)

AGAVE AMERICANA. South America.

Sap of the leaves saccharine; used as honey, and to make a wine, *Pulque.* (G.) According to Long, the leaves are used as a substitute for soap. For this purpose, after being cut, they are passed between the rollers of a mill with their points foremost, and the juice being conducted into wide shallow receivers, through a coarse cloth or strainer, is exposed to a hot sun until the aqueous part being exhaled, it is reduced to a thick consistence. It may then be made up into balls, with the help of ley ashes; it will lather with salt water as well as fresh. The leaves are also used for scouring pewter, and other kitchen utensils, and floors. The fibres of the leaves, separated by bruising and steeping in water, make a strong thread for common uses. (Lou.) The sap readily ferments, and forms an alcoholic liquor, which is powerfully intoxicating, and is a favorite beverage of the Spaniards in Mexico. Its smell is said to resemble that of putrid meat. (O'Sh.)

AGAVE VIVIPARA. *Curatoe.* South America.

Juice of the leaf, mixed with lime-juice and treacle, a good dressing for ulcers. The inspissated juice used as a plaister in gout; root chewed in diarrhœa. (G.)

BROMELIA. (Endl. Gen. Pl. 182.)

BROMELIA ANANAS. *Ananas*, *Pine apple*. South America.

Fruit highly odoriferous, esculent, astringent. (G.) Ropes are made in Brazil from a species of bromelia called *Grawatha*.

PITCAIRNIA. (Endl. Gen. Pl. 183.)

PITCAIRNIA CRYSTALLINA.

Exudes a crystalline gum from every part.

POURRETIA. (Endl. Gen. Pl. 184.)

POURRETIA LANUGINOSA.

Exudes a crystalline gum from every part. (G.)

TILLANDSIA.

TILLANDSIA USNEOIDES. West Indies.

Used in hæmorrhoids. (G.)

ORDER 160. COLCHICACEÆ. (De Cand. Bot. Gal. 473. (*Melanthaceæ.*) Lindl. Nat. Syst. 347; and Endl. Gen. Pl. 133.)

Flowers generally hermaphrodite; *perigone* coloured, six-cleft, or six-parted, the segments generally involute in æstivation; *stamens* six, adnate to the segments of the perigone; *anthers* extrorse: *ovaries* three, sometimes scarcely adherent, sometimes more or less united, and constituting a single three-celled ovary; the cells containing numerous seeds, attached to the inner angle, and terminated by a long or short style; *stigma* glandular; *fruit* generally three-valved, and three-celled, separating and dehiscing by their inner angle; *seeds* many, affixed to the inner margin of the valves; *embryo* in a fleshy albumen. *Herbs* of various habits.

Almost all the plants of this order are so active as to be really poisonous.

ASAGRÆA. (Lindl.)

ASAGRÆA OFFICINALIS. *Helonias officinalis*, *Veratrum officinale*, *Spike-flowered asagræa*. Mexico, South America.

Seeds, *Cebadilla*, *Cevadilla*, or *Sabadilla*, have been used as an anthelmintic for thread and tape-worms, and as a source from which to obtain *veratria*. Effects similar to those of *Veratrum album*, and has been employed in similar cases.

COLCHICUM. (De Cand. Bot. Gal. 473. Endl. Gen. Pl. 137.)

*COLCHICUM AUTUMNALE. (E. B. 1432.) *Colchicum*, *Meadow saffron*.

Fl. lilac. September, October. Perennial. Meadows and pastures.

The cormus, *Colchici cormus*, taken up towards the end of July, sliced transversely immediately to prevent its growth, and dried without heat, is a very powerful sedative, cathartic, diuretic, and expectorant, but is inert in the autumn, or when dried by heat; dose of the bulb, gr. ss. to gr. iij., made into a pill; seeds, *Colchici semina*, milder than the root. The Dublin College indicates the bulb as the part used in medicine. The active properties of Colchicum are supposed to depend on an alkaline principle called Colchicina. (G.) The dried cormi and seeds are used extensively in various pharmaceutical preparations. *Colchicum* is found to increase the secretions of the intestinal mucous membrane, and of the kidneys, and in some cases to act as a sudorific; it is also emetic and purgative, and in large doses is a powerful narcotico acrid poison; it is used externally in dropsy, gout, rheumatism, and also as an anthelmintic. The energy of the cormus, and consequently of the preparations from it, is often much impaired by the collection of the plant at a wrong time of the year, or by keeping it after it has been collected until the flowers sprout forth, which they will do quickly if taken into a warm place; when the leaves are quite withered is the best time for taking up the cormi, of which use should be made without loss of time; many of those sent to the drug shops for sale have already pushed forth their flowers, which are broken off so as to prevent the circumstance from being observed; I have seen many cwts. sent to town in this state, which nevertheless found a ready sale, and at the best price. (Lind.) Colchicum has been employed in gout, rheumatism, dropsy, inflammatory diseases generally, fevers, as an anthelmintic for expelling the tapeworm, chorea, hypochondriasis, hysteria, humoral asthma, and other chronic bronchial affections. It has been administered in substance, in a liquid, and as an extract. (Pereira.)

COLCHICUM VARIEGATUM: *Chequer-flower*. Greece.

Has been supposed to yield *Hermodactyls*.

COLCHICUM MONTANUM. *C. bulbocodiodes*, *Mountain colchicum*. South of Europe, Arabia.

It is not improbable that this may yield *Hermodactyl*, which Dale tells us is brought from Syria. (Pereira.)

GYROMIA. (Endl. Gen. Pl. (*Smilaceæ*) 154.)

GYROMIA VIRGINICA. *Mediola virginica*, *Indian cucumber*. United States.

Root diuretic. (G.) The rhizoma is diuretic, and has some reputation as a hydragogue, but it is not supposed to possess much energy. (L.)

HELONIAS. (Endl. Gen. Pl. 135.)

HELONIAS DIOICA. *Veratrum luteum*, *Devil's bit*, *Unicorn's horn*. United States.

The root in infusion is anthelmintic; in tincture bitter and tonic. (L. ex De Cand.)

HELONIAS ERYTHROSPERMA. *H. læta, Melanthium lætum, Anthericum subtrigynium.* United States.

This plant is a narcotic poison, and used in the southern part of the United States for destroying flies. (L.)

HELONIAS FRIGIDA. *Veratrum frigidum.* Mexico.

A poisonous plant called *Savoeja* by the Mexicans; horses that eat it become stupified. (L.)

HELONIAS OFFICINALIS. *Veratrum officinale.* Mexico.

This was ascertained by Messrs. Schiede and Deppe to produce at least part of the *Sabadilla seeds* of the shops, the use of which has now become so general for the manufacture of *Veratria.* Its seeds are the officinal part, and are used as those of *Veratrum sabadilla.* (L.)

PARIS. (Lindl. Nat. Syst. 348. De Cand. Bot. Gal. (*Asparageæ*) 459. Endl. Gen. Pl. (*Smilaceæ*) 154.)

*PARIS QUADRIFOLIA. (E. B. 7.) *Herba paris, Herb paris, One berry, True love.*

Fl. greenish, the inner segments yellowish. May, June. Perennial. Moist and wet shady woods.

Alexiterial, recommended by Boerhave in maniacal cases; dose ʒj. a day; leaves and berries narcotic; root emetic; dose ℈ij.

TRILLIUM. (Endl. Gen. Pl. (*Smilaceæ*) 153.)

TRILLIUM CERNUUM. North America.

Root violently emetic; berry nauseous and poisonous. (G.)

TRILLIUM ERECTUM. *T. fœtidum, T. rhomboideum.* United States.

Rhizoma violently emetic, and the fruit suspicious; other species are reported to have the same properties. (L.)

VERATRUM. (De Cand. Bot. Gal. 473. Endl. Gen. Pl. 135.)

VERATRUM ALBUM. *Elleborus albus, Veratrum, White hellebore.* South of Europe.

Rhizoma, a drastic emetic, in doses of gr. ss. to gr. iij., for horses ℥ss. to ℥j., in farcy; also used as a sternutatory, and in itch ointments; juice used to poison weapons for war or hunting. (G.) The rhizoma is very poisonous, acting as a local irritant; applied to the nose, it produces violent sneezing; swallowed in small doses, as one or two grains, it is said to act as an emetic and purgative; in large quantities it causes violent vomiting, purging, and other consequences that produce death. It is rarely employed internally, except in cases of mania and epilepsy, lepra, torpid conditions of the large intestines, gout, &c. In the form of powder, it is sometimes presented as a sternutatory in amaurosis and affections of the brain. The *Unguentum veratri* is used against the itch, and the decoction not only in skin diseases, but also to destroy pediculi. (L.)

VERATRUM SABADILLA. *Cevadilla, Indian caustic barley.* Mexico and West Indian Islands.

Capsules and grains caustic; powder used by monks to kill fleas and lice. (G.) This furnishes one of the *Cevadilla, Cebadilla*, or *Sabadilla seeds* of commerce, which were formerly used to destroy pediculi, and as anthelmintics; they have also been employed in chronic rheumatism, and paralysis, and in neuralgic cases; they are now chiefly consumed in the manufacture of *Veratria*, to which they give the name. This substance is an active and dangerous local stimulant, but administered with caution, it proves a valuable medicine in gout, rheumatism, anasarca, and generally as a substitute for *Colchicum.* (L.) The fruit and seeds of V. sabadilla are said to be brought from the Antilles, under the name of *Cebadilla*, (Semina Sabadillæ Caribææ,) but I have never met with them. (Pereira.)

VERATRUM VIRIDE. *Helonis viridis, American hellebore.* United States.

Root emetic. (G.) The roots are acrid, emetic, and powerful stimulants, followed by sedative effects. In all respects it closely resembles *Veratrum album* in its properties. (L.) It is used in the United States as a substitute for V. album. (Pereira.)

ORDER 161.—PALMÆ. (De Cand. Bot. Gal. 480. Endl. Gen. Pl. 244.)

Perigone six-parted, persistent; *stamens* generally six, inserted beneath the scales of the perigone; *ovary* one, superior; *style* one or three; *fruit* baccate, or drupaceous, 1—3 celled, 1—3 seeded; *seeds* osseous; *embryo* minute, lodged in a large cavity of the albumen; *stem* shrubby; *leaves* petiolated, sheathing at the base; *spadix* terminal, often branched, enclosed in a one, or many-valved spatha; *flowers* small, with bractlets; *fruit* occasionally very large.

Many of these trees by tapping yield a juice called *Toddy*, which, when drank fresh, in the cool of the morning, is a mild aperient; when the day gets warm, it begins to ferment, and is converted into wine, and lastly vinegar, unless boiled down for a coarse brown sugar called *Jaggery.* The pith of the trunk of many palms yields by washing a fecula, *Sago*; and the kernels of their nuts yield by expression a butter-like oil.

ARECA. (Endl. Gen. Pl. 247.)

ARECA CATECHU. *A. faufel, Areca, Faufel, Betel-nut tree.* East Indies.

Husk of the fruit, *Pinang*, chewed with betel and a little lime as a sialagogue and stomachic, reddens the spittle; *Catechu* is extracted from the wood. (G.) The well-known *Betel-nut* is the fruit of this plant, and is remarkable for its narcotic or intoxicating powers; from the same fruit is prepared a kind of spurious *Catechu.* (L.) This plant produces a nut, which is cut into slices, wrapped in the aromatic leaves of the betel pepper, and chewed as we do tobacco. These leaves are previously covered with a thin layer of shell lime, to preserve the flavour longer in the mouth; in most parts of the East Indies the natives are continually chewing it, swallowing their saliva tinctured with the juice, and spitting out the rest; the inside of their mouths appears as red as blood, and it gives their teeth a dark colour, but it preserves the teeth, sweetens the breath, and is a stomachic and diuretic. (Lou.) Two kinds of Catechu, one called *Kassu*, which is black and mixed with paddy-husks; the other termed *Coury*, which is yellowish brown, are obtained from Areca-nuts. *Kassu* is the *Colombo* or *Ceylon Catechu*, or *Cutch.* (Pereira.)

ARECA GLOBULIFERA.

Properties similar to the last.

ARECA OLERACEA. *Cabbage palm.* West Indies.

Flowering bud, or cabbage, is highly esteemed, yields an oil. (G.) The green top is cut off, and the white heart of two or three inches in diameter, consisting of the leaves closely folded together, taken out, and eaten, either raw with pepper and salt, or fried with butter like the artichoke. (Lou.)

ARENGA. (Endl. Gen. Pl. 248.)

ARENGA SACCHARIFERA. *Borassus gomutus*, *Saguerus rumphii*, *Sugar palm.* East Indies.

Yields *Sago* and excellent *Toddy.* (G.) Said by Dr. Hamilton to produce one of the finest kinds of *Sago.* (L.)

BACTRIS. (Endl. Gen. Pl. 254.)

BACTRIS MINOR. *B. rotunda*, *Cocos guinensis*, *Prickly pole.* South America.

Fruit oily. (G.) Produces a fruit containing an acid juice, of which the Americans make a sort of wine. Canes, called by the French *Cannes de Tobago*, are made of the stem. (Lou.)

BORASSUS. (Endl. Gen. Pl. 250.)

BORASSUS FLABELLIFORMIS. *Lontarus domestica*, *Palmyra tree.* East Indies.

Yields *Toddy*, and also *Bdellium.* (G.) A wine and sugar are made from the sap of the trunk. (Lou.)

CALAMUS. (Endl. Gen. Pl. 249.)

CALAMUS DRACO. Indian Archipelago.

Fruit yields *Dragon's blood.* (G.) One of the resinous astringent substances called *Dragon's blood* is obtained from this. (L.) *Dragon's blood in drops*, (*Sanguis draconis in lachrymis*,) is obtained, according to Rumphius, by rubbing or shaking the fruit of *C. draco* in a bag. (Pereira.)

CARYOTA. (Endl. Gen. Pl. 248.)

CARYOTA URENS. *Saguaster major.* East Indies.

Yields *Toddy* and *Sago;* juice of the root used to poison wells; kernel made into a sweetmeat. (G.) The cellular part of the trunk yields *Sago* of the finest quality, according to Roxburgh; *Palm wine* is also obtained from the trunk in great abundance. (L.) In Ceylon this plant yields a sort of liquor, sweet, wholesome, and no stronger than water. It is taken from the tree twice or thrice a day, and an ordinary tree will yield three or four gallons. They boil this liquor, and thus make a kind of sugar of it called *Jaggery*. (Lou.)

CEROXYLON. (Lindl. Nat. Syst. 346. Endl. Gen. Pl. (*Iriarteæ*) 248.)

CEROXYLON ANDICOLA. *Wax palm.* South America.

Trunk covered two inches thick with wax and resin. (G.) Has its trunk covered by a coating of wax, which exudes from the spaces between the insertion of the leaves. It is, according to Vauquelin, a concrete inflammable substance, consisting of one-third wax and two-thirds resin. (L.) Melted with a little suet, this wax makes excellent tapers. (O'Sh.)

CHAMÆROPS. (Endl. Gen. Pl. 253. De Cand. Bot. Gal. 480.)

A species of this genus appears to yield *Gum caranna.* (G.) Also wax.

CHAMÆROPS HUMILIS. *Chamæriphes, Palma prunifera, Phœnix humilis.* South of Europe.

Said to yield *Bdellium;* fruit *Wild dates,* astringent. (G.)

COCOS. (Endl. Gen. Pl. 256.)

COCOS BUTYRACEA.

Fruit yields a solid oil. (G.)

COCOS FUSIFORMIS. *C. aculeatus, Ebenus Æthiopica, Black ebony tree, Great macaw tree.* Jamaica.

Yields *Macaw fat.* (G.)

COCOS NUCIFERA. *Palma cocos, Cocoa tree.* East Indies.

Yields the best *Toddy;* fruit bud, *Cabbage,* used for food; nuts, *Cocoa nuts,* contain a milky juice, very refreshing; flesh, strong tasted, very nutritive, fattening; used in stews; rubbed down with water, used as a milk; yield an oil by boiling or expression. Confounded with *Cacao nut.* (G.) The root is sometimes masticated instead of the areca nut; of the small fibres baskets are made in Brazil. The hard case of the stem s converted into drums, and used in the construction of huts.

The reticulated substance at the base of the leaf is formed into cradles, and some say into a coarse kind of cloth ; the unexpanded terminal bud is a delicate article of food. The leaves furnish thatch for dwellings, and materials for fences, buckets, and baskets. They are used for writing on, and make excellent torches ; potash in abundance is yielded by their ashes ; the midrib of the leaf serves for oars ; the juice of the flower and stems is replete with sugar, and is fermented into excellent wine, or distilled into a sort of spirit called *Arrack ;* or the sugar itself is separated under the name of *Jaggery* ; the fruit is valuable for food, and contains a delicious beverage ; the fibrous and uneatable rind is not less useful ; it is not only used to polish furniture, and to scour the floors of rooms, but is manufactured into a kind of cordage, called *Coir rope*, which is nearly equal in strength to hemp, and which Roxburgh designates as the very best of all materials for cables, on account of its great elasticity and strength. Finally, an excellent oil is obtained by expression ; the juice of this, as well as of other species of palms, is known in India by the name of *Toddy ;* it is a grateful beverage, and is found to be the simplest and easiest remedy that can be employed in removing constipation in persons of delicate habit, especially European females. (L.)

CORYPHA. (Endl. Gen. Pl. 252.)

CORYPHA CERIFERA. *Copernicia*, *Carnauba palm.* Brazil.

A slow growing palm-tree, the leaves of which are covered with wax, (*Carnauba wax*, which differs from that of the Ceroxylon in being unmixed with resin.

ELAIS. (Endl. Gen. Pl. 255.)

ELAIS GUINEENSIS. *Palma oleosa*, *Guinea palm*, *Oil palm.* Guinea.

Yields *Palm oil.* (G.) Also said to yield the best kind of *Palm wine.* (L.)

ELATE. (Lindl. Nat. Syst. 346.)

ELATE SYLVESTRIS. *Wild date tree.* East Indies.

Yields a pleasant *Toddy.* (G.)

LODOICEA. (Endl. Gen. Pl. 251.)

LODOICEA MALDIVICA. *L. sechellarum*, *Borassus sechellensis*, *Maldivian cocoa-nut tree.* East Indies.

Fruit, *Sea cocoa-nut*, but indifferent eating ; used in typhus fevers. (G.)

PHŒNIX. (Endl. Gen. Pl. 253.)

PHŒNIX DACTYLIFERA. *Palma*, *Date tree.* Levant.

Fruit, *Dates*, *Dactylus*, saccharine, fleshy, emollient, slightly astringent, and pectoral. (G.) The fruit of this tree makes a great part of the diet of the inhabitants of Arabia and part of Persia ; in Upper Egypt, many families subsist almost entirely upon it; they make a conserve of it with sugar, and even grind the hard stones in their hand-mills for their camels; the date is said to strengthen the stomach and the intestines, to stop looseness, and promote expectoration, for which purpose it is given in pectoral decoctions; it is also recommended in the piles, given in red wine; juice distilled forms a kind of *Arrack.* (Lou.) A single tree often affords in Arabia from 100 to 200 lbs. of fruit. (O'Sh.)

SAGUS. (Endl. Gen. Pl. 250.)

SAGUS FARINIFERA. East Indies.

Yields an indifferent kind of *Sago.* (L.)

SAGUS LÆVIS. Sumatra and Molucca.

Some of the finest *Sago* of Malacca is prepared from the soft cellular substance of the trunk before the fructification appears; it forms the principal part of the food of the natives of the Poggy Islands near Sumatra. (L.)

SAGUS VINIFERA. *S. genuina, S. palma pinus, Sagou, Sago, Sago palm.* Guinea.

Yields the best *Sago.* (G.) *Sagus Rumphii,* and *Saguerus Rumphii,* (Roxb.,) are also employed in the manufacture of *Sago.*

ORDER 162. AROIDEÆ. (De Cand. Bot. Gal. 480. Endl. Gen. Pl. 232.)

Flowers monœcious, sessile, arranged upon a simple spadix, generally surrounded by a monophyllous spathe, or by a few scales, sometimes naked; *perigone* none. *Male flower:* *stamens* definite, or indefinite; *anthers* 1—2 celled. *Female flower:* *ovaries* either mixed with the stamens, or separate, one-celled, rarely three-celled, many-seeded; *styles* and *stigmas* as many; *fruit* baccate, round, or rarely capsular, one-seeded by abortion; *embryo* straight, in the middle of a fleshy or farinaceous albumen; *radicle* inferior. *Herbs* with or without a stem; the *leaves* alternate, radical or sheathing at the base, sometimes pedate, or cordate.

ACORUS. (De Cand. Bot. Gal. 481. Endl. Gen. Pl. 241.)

*ACORUS CALAMUS. (E. B. 356.) *Sweet flag,* or *Sedge.*

Fl. June. Perennial. Watery places and banks of rivers.

The rhizoma contains an aromatic bitter principle, which has caused the plant to be regarded as medicinal; in cases of chronic catarrh and humid asthma benefit has been received from its exhibition. In Constantinople, the rhizoma is made into a confection, which is considered a good stomachic, and is eaten freely during the prevalence of epidemic diseases. It is in this country chiefly employed by perfumers in the manufacture of hair powder, on account of the fragrance of the essential oil which is mixed with its farinaceous substance; Dr. Pereira says, that, although it is rarely employed in medicine, it might frequently be substituted for other more costly aromatics. It is adapted to cases of dyspepsia, or as an adjunct to tonics or to purgatives. (L.)

ARISÆMA. (Endl. Gen. Pl. 234.)

ARISÆMA ATRORUBENS. *Arum atrorubens, A. ringens, A. tryphyllum, Dragon root, Indian turnip.* North America.

Arum, P. U. S., root, boiled in milk, used in phthisis. (G.) Violently acrid and almost caustic; the rhizoma when fresh is too powerful to render its internal exhibition safe; the acrid property extremely volatile, easily driven off by heat, when the rhizoma yields one-fourth of pure delicate amylaceous matter resembling the finest arrow-root, very white, delicate, and nutritive. (L.)

ARUM. (De Cand. Bot. Gal. 480. Endl. Gen. Pl. 235.)

ARUM COLOCASIA. *Calcas, Colocasia, Kachoo.* Levant.

ARUM CORDIFOLIUM.

ARUM DIVARICATUM. *Nælenschena.* East Indies.

ARUM DRACUNCULUS. *Dracontium, Dragons.* South of Europe.

ARUM INDICUM. *Maun kachoo.* China.

ARUM MACRORHIZON. East Indies.

ARUM MUCRONATUM.

ARUM PENTAPHYLLUM. *Rumphal.*

ARUM PEREGRINUM.

ARUM TENUIFOLIUM. *Arisarum, Friar's cowl.* South of Europe.

ARUM VIRGINICUM. North America.

Roots used as food. (G.)

*ARUM MACULATUM. (E. B. 1298.) *Arum, Barba Aaronis, Serpentaria minor, Zingiber album, Z. germanicum, Cuckoo pint, Wake robin.*

Fl. spadix purplish. April, May. Perennial. Hedge banks and groves.

Root acrid, incisive, detersive, gr. x. to ℈j. of the fresh root, made into an emulsion with gum arabic and spermaceti, taken three or four times a day, useful in obstinate rheumatisms; has been used in washing instead of soap, but unless the juice is well separated, it frets and chaps the hands of the laundresses. (G.) The tubers are composed of a large quantity of amylaceous matter, mixed with an acrid poisonous juice; by repeated washing, and by means of heat, the acrid principle is removed, and the residuum is a bland nutritious substance of the nature of *Arrowroot*, which is manufactured in the island of Portland, and thence called *Portland sago*. It is used extensively in some parts of Devonshire. In the recent state the tubers are stimulant, diaphoretic, and expectorant. (L.)

CALADIUM. (Endl. Gen. Pl. 236.)

CALADIUM SAGITTÆFOLIUM. *Arum sagittæfolium, Toyos. Eddoes.* West Indies.

Roots imported from the West Indies, eaten boiled, the rough coat being split, and the pulp squeezed out; it tastes like soap. (G.)

CALADIUM VIOLACEUM. *Arum violaceum.*

Roots esculent. (G.)

CALLA. (De Cand. Bot. Gal. 481. Endl. Gen. Pl.)

CALLA PALUSTRIS. *Water dragons.* South of Europe.

Root used as food. (G.) The rhizomata, although acrid and caustic in the highest degree, are, according to Linnæus, made into a kind of bread in high estimation, called "*Missebrod*" in Lapland; this is performed by drying and grinding the roots, afterwards boiling and macerating them, till they are deprived of their acrimony, when they are baked like other farinaceous substances. (L.)

COLOCASIA. (Endl. Gen. Pl. 236.)

COLOCASIA ESCULENTA. *Arum esculentum, Arum peltatum, Caladium esculentum, Black cacao, Cocoa root, Eddoes, Indian kale.* East and West Indies.

Roots and petioles esculent. (G.) The tubers and leaves are a common article of food among negroes, but they are so acrid as to prove uneatable by Europeans not accustomed to them; the boiled leaves produce a most inconvenient flow of saliva, and a sense of choking. (L.)

DIEFFENBACHIA. (Endl. Gen. Pl. 238.)

DIEFFENBACHIA SEGUINA. *Arum regnium. A. seguinum, Caladium seguinum, Dumb cane.* West Indies.

Roots used in fomentation for the gout, or bruised with lard, to rub on dropsical limbs; expressed juice of the stem and root, with one-fourth of rum, is diuretic, but it can scarcely be swallowed. (G.) One of the most venomous of all known plants. If the rhizoma is chewed, it produces a dangerous swelling of the tongue, and is said to produce dumbness when merely applied to the lips. Sir W. Hooker says, that the slightest application of the spadix to the tongue gives great pain. The juice is said to impart an indelible stain to linen. Browne says that the stem is employed in the West Indies to bring sugar to a good grain, when the juice is too viscid, and cannot be made to granulate properly by the application of lime alone. (L.)

DRACONTIUM. (Endl. Gen. Pl. 240.)

DRACONTIUM PERTUSUM. *Arum, Dracontium.* West Indies.

Dropsical patients are covered with the fresh leaves, which produce a slight but universal vesication. (G.)

DRACONTIUM POLYPHYLLUM. South America.

The spathe smells so powerfully upon the first opening, that vomiting and fainting sometimes ensue from the stench. Linnæus says, "Olfaciente attonitos redderet et entalepticos." This is one of the remedies used in Guayana against the bite of the Labarri snake, which its spotted leafstalks resemble in colour; no doubt it is a powerful stimulant. Ainslie says, the prepared tuber is supposed in India to be antispasmodic, to be a valuable remedy in asthma, and to be used in hæmorrhoids; but as this species is not found in India, some other plant was probably intended. (L.)

HOMALOMENA. (Endl. Gen. Pl. 238.)

HOMALOMENA AROMATICA. *Calla aromatica.* East Indies.

When cut, this diffuses a pleasant aromatic scent, something like that of the Zingiberaceæ. The medicinal virtues of the rhizoma are in high estimation among the natives of India; it sells at from ten to sixteen rupees the maund. (L. ex Roxb.)

SCINDAPSUS. (Endl. Gen. Pl. 239.)

SCINDAPSUS OFFICINALIS. *Pothos officinalis.* Bengal.

The fruit, cut into transverse pieces and dried, is an article of some importance in the Hindoo Materia Medica, called *Gujpippul,* and sold by the druggists under that name. (L. ex Roxb.)

SYMPLOCARPUS. (Endl. Gen. Pl. 240.)

SYMPLOCARPUS FŒTIDUS. *Dracontium fœtidum, Ictodes fœtidus, Pothos fœtida, Skunk cabbage, Skunk weed.* United States.

Root, *Dracontium, P. U. S.*, antispasmodic; used in asthma and hooping-cough; the root of *Veratrum viridi* is sometimes gathered for it in mistake. (G.) This plant emits a powerful offensive odour; its tubers are acrid, but when dried and powdered are antispasmodic. An excellent remedy in asthma, catarrh, and chronic coughs; also employed with success in hysteric paroxysms, dropsy, rheumatism, and even epilepsy. (L.)

TYPHONIUM. (Endl. Gen. Pl. 235.)

TYPHONIUM TRILOBATUM. *Arum trilobatum, A. orixense, Arisarum amboinum.* East Indies.

Root used as food. (G.) The tubers, when fresh, are exceedingly acrid. The natives of India use them in poultices to disperse or bring forward scirrhous tumours; they also apply them externally to the bite of venomous snakes, at the same time giving inwardly about the size of a field bean. It is certainly a most powerful stimulant in proper hands. (L. ex Roxb.)

ORDER 163. TYPHACEÆ. (De Cand. Bot. Gal. 482. Endl. Gen. Pl. 241.)

Flowers monœcious, aggregated in unisexual catkins; *perigone* three-leaved, or obsolete. *Male flower: stamens* 3—6; *filaments* long; *anthers* wedge-shaped. *Female flower: ovary* one, free, one-seeded, ovule pendulous; *style* one; *stigmas* 1—2; *fruit* one-seeded; *embryo* straight, in the middle of a fleshy or farinaceous albumen; *radicle* inferior. *Aquatic herbs* without joints; *leaves* alternate, ensiform. somewhat sheathing.

SPARGANIUM. (De Cand. Bot. Gal. 482. Endl. Gen. Pl. 241.)

*SPARGANIUM RAMOSUM. (E. B. 744.) *Sparganium, Branched burr reed.*

Fl. pale yellow. July. Perennial. Ditches and ponds.

Root given with wine for the bite of the viper. (G.)

TYPHA. (De Cand. Bot. Gal. 482. Endl. Gen. Pl. 242.)

*TYPHA LATIFOLIA. (E. B. 1455.) *T. palustris, Typha, Cat's tail, Reed mace.*

Fl. sterile, yellow, fertile, greenish brown. July, August. Perennial. Sides of ponds and lakes.

Flowers mixed with hog's lard used to cure burns. (G.) Pollen inflammable like that of *Lycopodium*, used as a substitute for it. (L.)

ORDER 164. CYPERACEÆ. (De Cand. Bot. Gal. 483. Endl. Gen. Pl. 109.)

Flowers glumacious, spiked, hermaphrodite, or unisexual; *glumes* or *scales* univalved; *perigone* none; *stamens* three; *filaments* capillary; *anthers* acuminate at the apex, cordate at the base; *ovary* free, simple; *style* one; *stigmas* 2—3; *fruit* (*achene*) triangular, or compressed, one-seeded, indehiscent; *albumen* farinaceous; *embryo* very small, at the base of the albumen. *Perennial herbs*, resembling grasses; *stems* generally without knots; *leaves* sheathing, sheath entire.

BUECKIA. (Endl. Gen. Pl. 113.)

BUECKIA. . . . .

Root used as a spice. (G.)

CAREX. (De Cand. Bot. Gal. 488. Endl. Gen. Pl. 110.)

*CAREX ARENARIA. (E. B. 928.) *Sea sedge.*

Fl. June. Perennial. Sandy sea shores.

The creeping stems are reported to be diaphoretic, and to be possessed of demulcent and alterative powers. They are collected on the continent, and sold under the name of *German sarsaparilla*. (L.) Numerous experiments made in Germany tend to prove that the root possesses all the properties of *Sarsaparilla*. This plant is carefully propagated over the dikes of Holland, where its interlacing roots bind the sand together, and thus protect the country from fatal inundations. (O'Sh.)

*Carex hirta. (E. B. 685.) *Hairy sedge.*

Fl. May, June. Perennial. Wet pastures.

Has a reputation similar to the last, and is said to be administered with advantage in rheumatic and cachectic affections. (L.)

*Carex intermedia. (E. B. 2042.) *C. disticha, Soft brown marsh sedge.*

Fl. June. Perennial. Marshy ground and wet meadows.

*Carex sylvatica. (E. B. 995.) *Pendulous wood sedge, Wood sedge.*

Fl. May, June. Perennial. Moist woods.

Carex villosa. *Bastard sarsaparilla, German sarsaparilla.*

Roots of the whole of these used for *Sarsaparilla.* (G.)

Cyperus. (De Cand. Bot. Gal. 483. Endl. Gen. Pl. 119.)

Cyperus articulatus. *Adrue.*

Root aromatic, stimulant, used for *Virginian snake root;* infusion good in vomiting and fluxes. (G.)

Cyperus esculentus. *Rush nut.* South of Europe.

Root eatable, when roasted makes good coffee. (G.) Yields a preparation resembling chocolate. (O'Sh.)

Cyperus hexastichos.

Used for the true *Cyperus rotundus.*

*Cyperus longus. (E. B. 1039.) *English galingale, Long rooted cyperus, Sweet cyperus.*

Fl. light brownish. July. Perennial. Moist marshes. Rare.

Contains a bitter principle, which gives its roots a tonic and stomachic property. (L.) Tonic, diaphoretic, and diuretic. (O'Sh.)

Cyperus odoratus. India.

Has a warm aromatic taste; given in India in infusion as a stomachic. (L.)

Cyperus papyrus. Egypt.

The *Papyrus,* or paper of the Egyptians, was obtained from this.

Cyperus perennis. *Nagur mootha.* India.

Root, dried and pulverised, used by Indian ladies for scouring and perfuming the air. (L.)

Cyperus rotundus. *Round rooted cyperus.* India.

Roots of this, and *C. longus,* sweet-scented, heating; dose ʒss. to ʒj., equal to the foreign aromatics; when first powdered the scent is weak, but by keeping it becomes stronger. (G.) The tubers of *C. rotundus* are said by General Hardwicke to have been given with benefit in cholera. (L.)

SCIRPUS. (De Cand. Bot. Gal. 485. Endl. Gen. Pl. 118.)

*SCIRPUS LACUSTRIS. (E. B. 62.) *Holoschænus*, *Bull-rush.*

Fl. with brown fringed glumes. July, August. Perennial. Margins of lakes and ponds.

Seed astringent, emmenagogue, diuretic, hypnotic. (G.) Used to bottom chairs, thatch cottages, and for other domestic purposes. (Lou.)

SUB-CLASS 2. GLUMACEÆ.

Perianth usually absent, its place occupied by herbaceous or scariose bracteæ, imbricated over each other; if present, surrounded by such bracteæ.

ORDER 165. GRAMINEÆ. (De Cand. Bot. Gal. 499. Endl. Gen. Pl. 77. Lindl. Nat. Syst. 369.)

Flowers usually hermaphrodite, sometimes monœcious, or polygamous, consisting of imbricated knots, of which the most exterior are called *glumes*, the interior immediately enclosing the stamens *paleæ*, and the innermost, at the base of the ovarium, *scales; glumes* usually two, alternate, sometimes single, most commonly unequal; *paleæ* (*Glumellæ* D. C.) two, alternate, the lower or exterior simple, the upper or interior composed of two united by their contiguous margins, and usually with two keels, together forming a kind of dislocated calyx; *scales* two or three, sometimes wanting; if two, collateral, alternate with the paleæ, and next the lower of them, either distinct or united; *stamens* hypogynous, 1, 2, 3, 4, 6, or more, one of which alternates with the two hypogynous scales, and is therefore next the lower palea; *anthers* versatile: *ovary* simple; *style* two, very rarely one or three; *stigmas* feathery, or hairy; *pericarp* usually undistinguishable from the seed, membranous; *albumen* farinaceous; embryo lying on one side of the albumen at the base, lenticular, with a broad cotyledon, and a developed plumula, and occasionally but very rarely, with a second cotyledon on the outside of the plumula, and alternate with the usual cotyledons; *rhizoma* fibrous, or bulbous; *culms* cylindrical, usually fistular, closed at the joints, covered with a coat of silex; *leaves* alternate, with a split sheath; *flowers* in little spikes, called *locustæ*, arranged in a spiked, racemed, or panicled manner (Lindl.); *seeds* nutritive, the basis of bread, and in general form the most usual food of man and several animals. They are almost universally wholesome, some few possess an aromatic quality; the bran of most contains an acrid resin, to get rid of which the seeds are husked or pearled, by being steamed, dried, and ground in mills for that purpose. The stems contain a saccharine juice.

ANDROPOGON. (De Cand. Bot. Gal. 499. Endl. Gen. Pl. 108.)

ANDROPOGON CALAMUS AROMATICUS. Καλαμος αρωματικος. (*Diosc.*) India.

Known only from a short note by Dr. Royle, who states that it, and not *A. joarancussa*, produces the fragrant and stimulant *Grass oil of Namur*, and who conjectures it to have been the "sweet cane," and the "rich aromatic reed from a far country," of Scripture. It is used in India as an external application in rheumatism, in the same way as Cajeputi. It is also given as a stimulant. (L.)

ANDROPOGON JOARANCUSSA. India.

This has been said to yield *Grass oil*, but Dr. Royle denies it; see the preceding plant.

ANDROPOGON NARDUS. *Nardus indica, Indian spikenard.*

Bitter, smells like cyperus, and has the qualities of camel's hay; formerly used in *Mithridate* and *Venice treacle.* (G.)

ANDROPOGON SCHOENANTHUS. *Juncus odoratus, Schœnanthus, Camel's hair, Lemon grass, Sweet rush,* Εχοινος, (*Diosc.*) Arabia.

Stalk and leaves aromatic, sharp tasted, heating, attenuant, discussive, tonic; contains a resin analogous to *Myrrh;* formerly used in *Mithridate* and *Venice treacle;* the infusion of it drank in India by those with whom the Chinese tea does not agree. (G.) The full-grown leaves, roasted, are considered by Indian practitioners as an excellent stomachic. The whole plant has an aromatic bitter flavour. (L.) Formerly brought over from Turkey, in bundles about a foot long, and kept in the shops to be employed as a stimulant and deobstruent, but it is now little used. (Lou.) Yields *Oil of lemon-grass.* (Pereira.)

ANTHOXANTHUM. (De Cand. Bot. Gal. 509. Endl. Gen. Pl. 81.)

ANTHOXANTHUM MURICATUS.

The fibrous roots are sold by perfumers under the Tamool name of *Vittie Vayr.* (Pereira.)

*ANTHOXANTHUM ODORATUM. (E. B. 647.) *Spring grass, Sweet scented vernal grass.*

Fl. May. Perennial. Meadows, woods, and pastures.

Nearly resembles *Camel's hay* and *Indian nard:* dried herb a substitute for tea; the very agreeable odour of new hay is owing to this grass; root aromatic; twelve pounds of hay, or at most fourteen pounds, *per diem,* is the full quantity that ought to be allowed to a horse that works regularly and moderately. (G.)

ARUNDO. (De Cand. Bot. Gal. 520. Endl. Gen. Pl. 91.)

ARUNDO DONAX. *Great reed.* South of Europe.

Root diuretic and emmenagogue. (G.)

AVENA. (De Cand. Bot. Gal. 512. Endl. Gen. Pl. 96.)

**AVENA SATIVA. *Cultivated oat.*

Fl. July. Annual. Native country unknown.

Of this there are many varieties, the chief of which are

AVENA SATIVA ALBA. *White oats.*

AVENA SATIVA NIGRA. *Black oats.*

AVENA NUDA. *Naked oat, Pill, Pilcorn.*

Grain used to feed horses, fourteen pounds by the day being the usual allowance; but hard-worked horses need not be stinted; a great part passes through them unchanged, unless the oats are bruised or wetted with salt water, in which case they are completely digested; it is also made into grits and flour; *Grits, Gruau d'avoine, avenæ semina, P. L., Grutellum, C. P*,, oats cut into two or three pieces, and the husks separated by a mill; used for making a heating stimulating food. (G.) *A. nuda* is considered the best for making groats (M'W.) Yields *Embden* and other *groats*, a common article of food among the sick, but it is scarcely medicinal.

*Avena strigosa. (E. B. 1264.) *Thistle-pointed oat, Spanish oat.*

Fl. June, July, Annual. Corn fields.

Properties and uses the same as those of *A. sativa.*

Bambusa. (Endl. Gen. Pl. 102.)

Bambusa arundinacea. *Arundo bambos, A. tabaxifera, Bamboo cane.*

Bambusa baccifera. East Indies, &c.

Yield *Tabasheer.* (G.) There is perhaps scarcely any plant that serves for so many domestic purposes as the bamboo; it is employed in the construction of houses and bridges; masts for boats, domestic furniture, boxes, mats, utensils of various kinds, and even paper, are made from it; it is the common fence for gardens and fields, and is frequently used as pipes for conveying water. In the cavities or tubular parts is found, at certain seasons, a concrete white substance, called *Tabasheer*, an article which the Arabian physicians hold in high estimation; the nature of this substance is very different from what might have been expected in the product of a vegetable; its indestructibility by fire, its total resistance to acid, its uniting by fusion with alkalies in certain proportions, and thus forming a transparent permanent glass, and its being again separable from their compounds entirely unchanged, seem to afford the strongest reasons for considering it as very nearly identical with common siliceous earth. As to its medical virtues, although much esteemed by Oriental practitioners, they are not such as to cause it to have any regard paid it in the modern practice of physic in Europe. (Lou.) A kind of vessel is formed of the space between two joints, which has been employed for holding the quicksilver imported from China.

Bromus. (De Cand. Bot. Gal. 515. Endl. Gen. Pl. 101.)

Bromus catharticus. *Guilno.* Peru.

Seed? purgative. (G.) Said to be purgative, but Dr. Pereira remarks that this statement requires further proof, for B. secalinus, which was asserted by some authors to be poisonous, has been found by Cordier to be innocuous. (L.)

*Bromus mollis. (E. B 1078.) *Soft brome grass.*

Fl. May, June. Perennial. Meadows, pastures, and banks.

Seeds said to bring on giddiness to the human species and quadrupeds, and to be fatal to poultry. (Lou.)

BROMUS PURGANS. Canada.
Said to be emetic, but this requires confirmation. (L.)

*BROMUS STERCLIS. *Bromus, Drank, Barren brome grass, Wild oat grass.*

Fl. June. Annual. Waste grounds and hedges.

Seed drying, corrects stinking breath; decoction vermifuge. (G.)

CALAMAGROSTIS. (De Cand. Bot. Gal. 502. Endl. Gen. Pl. 90.)

*CALAMAGROSTIS LANCEOLATA. (E. B. 2159.) *Arundo calamagrostis, Grumen arundinaceum, Purple-flowered small reed, Reed grass.*

Fl. June. Perennial. Moist hedges in fenny countries.

Root diuretic and emmenagogue. (G.)

COIX. (Endl. Gen. Pl. 80.)

COIX LACHRYMA. *C. ovata, Lachryma jobi, Job's tears.*

Seeds diuretic, and used to make anodyne necklaces for teething children. (G.)

FESTUCA. (De Cand. Bot. Gal. 517. Endl. Gen. Pl. 101.)

FESTUCA QUADRIDENTATA. *Sesleria quitensis.* Quito.

Humboldt tells us that this plant is very poisonous; it is called *Pigouil* by the natives of Quito. (L.)

GLYCERIA. (De Cand. Bot. Gal. 525. Endl. Gen. Pl. 98.)

*GLYCERIA FLUITANS. (E. B. 1520.) *Festuca fluitans, Poa fluitans, Gramen mannæ, Typha ulva, Flote grass, Manna grass.*

Fl. June, August. Perennial. Stagnant waters.

Husked seeds, *Russia seeds, Manna seeds,* nutritive, sweet, eaten. (G.) Used in Russia and Poland in soups and gruels. (Lou.)

HORDEUM. (De Cand. Bot. Gal. 531. Endl. Gen. Pl. 104.)

**HORDEUM DISTICHON. *Hordeum, Grudum, Jow, Common barley.*

Fl. June. Annual. Native of Tartary.

HORDEUM DISTICHON NUDUM. *Turkey barley.* A variety.

**HORDEUM HEXASTICHON. *Escourgeon, H. h. hybernum, Greek barley, Bigg, Round barley, Six-sided barley, Winter barley, Full barley.*

Fl. June. Annual.

**HORDEUM VULGARE. *H. polystichum vernum, H. tetrastichum, Bere, Square barley, Spring barley.*

Fl. June. Annual. Native of Tartary.

H. vulgare cœleste, H. cœleste, H, tetrastichum nudum, Tri-

ticospeltum, *Zeopyrum*, *Barley wheat*, *Black barley*, *Naked barley*. A variety.

HORDEUM ZEOCRITON. *H. distichum β*, *Zeocriton commune*, *Battledore barley*, *German rice*, *Sprat barley*. All these are cultivated for making *Pearled barley*, or *Malt*. *Pearl barley*, *Hordeum mundatum*, *H. perlatum*, *Hordeum*, *P. U. S.*, *Hordei semina*, *P. L.* The seeds of spring barley steamed to soften the skin, then dried, and ground in a mill to separate the husk, except that lodged in the deep furrow of the seed. *Scotch pearl barley*, *French barley*, *Hordeum perlatum*. The seeds ground smaller than the last, into spherical granules, generally made from *Bigg*, or *Bere*. *Faro de orzo* made from *Sprat barley*. All these *Pearl barleys* are used to make a cooling gruel, to thicken soups, and as ingredients in pectoral and antifebrile drinks. (G.)

Malt, *Maltum*, *Bina*, is made from the seeds of any of the species of barley, soaked in water for two or three days, or until the water turns reddish, then drained, spread about two feet thick on a floor, where it heats and emits its root or spike; it is then spread thinner for two or three days, then heaped up again, until it again heats; five pounds of spring barley produce about four of malt; malt is used to make an alterative, analeptic infusion, and its decoction is fermented to form beer and ale. *Grains*, the exhausted malt left from brewing, used in London as a food for cows, to whose milk it communicates a peculiar flavour and tendency to putrescence. (G.) In order to understand the process of malting, it may be necessary to observe, that the cotyledons of a young seed are changed by the heat and moisture of the earth into sugar and mucilage; malting is only an artificial method of effecting this object, by steeping the grain in water and fermenting it in heat, and then arresting its progress towards forming a plant by kiln drying, in order to take advantage of the sugar in distillation for spirit, or fermentation for beer. (Lou.)

LOLIUM. (De Cand. Bot. Gal. 531. Endl. Gen. Pl. 103.)

*LOLIUM TEMULENTUM. (E. B. 1124.) *Darnel*, *Bearded darnel*.

Fl. July. Annual. Corn-fields.

The grains are of evil report for causing intoxication in men, beasts, and birds, and bringing on fatal convulsions. Haller speaks of their communicating these properties to beer. (Smith.) It acts as a narcotico-acrid poison; *Darnel meal* was formerly recommended as a sedative poultice. (L.)

ORYZA. (Endl. Gen. Pl. 78.)

ORYZA SATIVA. *O. Indica*, *Oryza*, *Indian rice*. East Indies.

Seeds, *Rough rice*, *Dahn*, *Paddy*, used to feed birds; a spirit is distilled from it called *Arrack*. Husked seeds, *Rice*, boiled for food, and to make an astringent decoction. *Ground rice* used for puddings. (G.) By far the best imported rice is that from Carolina; it is larger and better tasted than that of India, which is small, meagre, and the grains frequently broken. As an article of diet, rice has been extolled as superior to almost any other vegetable, but whatever it may be in warmer climates, where it is a common and to many persons almost their only food; it does not appear to be so well calculated for European constitutions as the potato, for we find that the poor constantly reject rice when potatoes can be had, and whilst these can be obtained, rice will always be considered in this country rather as a dainty to be eaten with sweet condiments, spice, fruit, &c., than as ordinary food. (Lou. from Willich's Family Cyclopædia.)

PANICUM. (De Cand. Bot. Gal. 506. Endl. Gen. Pl. 83.)

PANICUM FRUMENTACEUM. *Saumah.* India.

Seeds used in India as grain. (G.)

PANICUM GLAUCUM. *Setaria glauca*, *Panic.* France.

Seeds used to feed poultry, and sometimes for gruel.

PANICUM ITALICUM. *Setaria Italica*, *Coynee*, *Miglio panico.* India.

Seeds small, very delicate, and wholesome; added in India to beer to make it more intoxicating. (G.)

PANICUM MILIACEUM. *P. milium. Milium esculentum*, *Milium*, *Millet.* East Indies.

Husked seeds, *M. mundatum*, used to make gruel; also ground for flour. (G.)

PANICUM PILOSUM. *Chenna.*

Seeds used in India as grain. (G.)

PASPALUM. (Endl. Gen. Pl. 82.)

PASPALUM FRUMENTACEUM. *Warroogo.*

Seeds used for food. (G.)

PENNICILLARIA. (Endl. Gen. Pl. 85.)

PENNICILLARIA SPICATA. *Holcus spicatus*, *Panicum Americanum*, *Pennisetum spiculum*, *Bajorah*, *Couscous.* India.

Seed used as bread-corn, or made into gruel. (G.)

PHALARIS. (De Cand. Bot. Gal. 507. Endl. Gen. Pl. 81.)

*PHALARIS CANARIENSIS. (E. B. 1510.) *Phalaris*, *Canary grass.*

Fl. yellowish green. July. Biennial. Cultivated grounds.

Juice of the herb drank in pain of the bladder; seed (*Canary seed*,) used to feed small birds, and ground to make flour paste. (G.)

The culture of this grass is chiefly carried on in the Isle of Thanet, where the chaff is esteemed as a horse food. (Lou.)

PHRAGMITIS. (Endl. Gen. Pl. 91.)

*PHRAGMITIS COMMUNIS. (E. B. 401.) *Arundo phragmitis, A. vallatoria, Common reed.*

Fl. July. Perennial. Ditches and margins of rivers.

Root diuretic, depurative; panicles dye wool green. (G.)

SACCHARUM. (De Cand. Bot. Gal. 500. Endl. Gen. Pl. 107.)

SACCHARUM OFFICINALE. *Arundo saccharum*, *Sugar-cane.* India.

Juice yields *Sugar.* (G.) Dr. Chisholm says the juice is the best antidote to arsenic. (L.) The canes, when cut down, are passed and repassed between the iron rollers of the sugar mills; the juice thus squeezed out is collected and boiled with quick lime, until a thick syrup is produced, when the whole is cooled and granulated in shallow vessels; it is now the *Raw* or *Muscavado sugar* of commerce; when still further purified, it becomes the *Loaf* or *Refined sugar* of the shops. *Sugar-candy* is formed by dissolving loaf-sugar in water over a fire, boiling it to a syrup, and then exposing it to crystallize in a cool place; this is the only sugar esteemed in the east. *Barley-sugar* is a syrup from the refuse of sugar-candy, hardened in cylindrical moulds. *Rum* is a spirit distilled from the fermented juice of sugar and water. Besides the use of sugar in medicine, dietetics, and distillation, it is employed to preserve animal and vegetable substances from putrefaction, and to communicate a gloss to ink, varnishes, and pigments. When very cheap, it has been successfully employed to fatten cattle. (Lou.)

SACCHARUM SINENSE. *Chinese sugar-cane.* China.

Juice yields *Sugar.* (G.) From this *Chinese sugar* is made. (L.)

SECALE. (De Cand. Bot. Gal. 530. Endl. Gen. Pl. 103.)

**SECALE CEREALE. *Secale, Rye.*

Fl. June. Annual. Biennial. Native of the borders of the Caspian Sea.

Var. α. *S. cereale hybernum, Winter rye.*

β. *S. c. vernum, Spring rye.*

Seeds malted and manufactured into *Rye spirit*; also ground to flour. *Spurred rye, Ergot, S. cornutum, P. U. S.* Diseased grains of rye, which, when ground with healthy rye and made into bread, produce gangrene of the limbs; now in use as an emmenagogue in small doses; and to accelerate the contraction of the womb in protracted labour, and passive uterine hæmorrhage; dose ten to fifteen grs., powdered, every ten minutes, or as an infusion. (G.) Produces the *Ergot*, which is by many botanists considered a morbid condition of the grains of rye; Lindley and others, however, consider it as a Fungus, (*Spermoedia clavus,*) which see.

SORGHUM. (Lindl. Nat. Syst. 379. Endl. Gen. Pl. (*Andropogon*) 108.)

SORGHUM BICOLOR. *S. vulgare bicolor, Holcus bicolor, Milium sabæum, Barbadoes millet, Guinea corn.* Persia, &c.

SORGHUM RUBENS. *S. vulgare rubens, S. arduini, Holcus rubens, Saggina rubra.* Africa.

SORGHUM SACCHARATUM. *Holcus drachna, H. saccharatus, Yellow-seeded Indian millet.* India.

SORGHUM VULGARE. *S. commune, Holcus sorghum, Milium Indicum, Durra, Jooar, Indian millet, Turkey millet.* India.

Var. 1. *S. album, H. sorghum, White flat seeded sorgho.*
2. *S. nigrum, Black-seeded sorgho.*

Seeds used as bread-corn, or made into gruel. Grain of *S. vulgare*, black, yields little flour; used to feed poultry. (G.) *S. vulgare* has been introduced into Italy, Spain, Switzerland, and some parts of Germany, also into the West Indies, where, being esteemed a hearty food for labourers, it is called *Negro Guinea corn.* The flour is very white, and they make good bread of it, or rather cakes, about two inches in thickness. The bread they make of it in some parts of Italy is dark and coarse. In Tuscany it is used chiefly for feeding poultry and pigeons, sometimes for kine, swine, and horses. (Lou.)

TRITICUM. (De Cand. Bot. Gal. 528. Endl. Gen. Pl. 103.)

TRITICUM COMPOSITUM. *Egyptian wheat, Many-eared wheat.* Egypt.

TRITICUM MONOCOCCUM. *Frumentum barbatum, Spelta minor, Briza zea, Brent barley, St. Peter's corn.*

TRITICUM POLONICUM. *Dantzic wheat, Forty days' wheat, Polish wheat, Two months' wheat.*

TRITICUM SPELTA. *Spelta major, Zea dicoccos, Ador far, Gran farro, Spelt wheat.*

TRITICUM TURGIDUM. *Duck-bill wheat, Gray pollard, Square gray wheat, T. pyramidale, Cone wheat.*

TRITICUM VULGARE.

Var. α. *Æstivum, Vernello, Bled rouge, Froment de mars; Gom, Spring wheat.*

Var. β. *Hybernum, Siligo, White wheat, Red wheat, T. hybernum granis rubescentibus, Calbigia, T. æstivum hybernum; T. aristatum hybernum, Bearded wheat, Bled blanc, Brance, Cascola Bianca, T. chalepense spica breviore nitidissima alba zea, T. Josephi,* and several other species, are cultivated for grinding into a flour to make the best bread or other farinaceous food; the seeds also serve to make starch, farro, and semolino; the Cascola bianca is cultivated principally for its brilliant slender straw, used in making hats, although it makes very good bread. The ears of wheat are occasionally eaten parched, but if used for any time are very hurtful. *Farro*, usually made from spelt wheat, steamed, dried, and pearled as in making pearl barley. *Soojee*, *Semolino*, *Semola*, *Urena:* the heart of the grain, that resists the action of the mill, the stones being soft, blunt, and not set close, remaining in granules like coarse sand, mostly made from red wheat: imported from Italy. *Semoletta*, *Semola rarita.* A still smaller kind of pearled wheat separated from the preceding by sifting. All of these are used for making gruel, and thickening soups and milk; the two latter for making vermicelli and other Italian pastes. *Bran*, *Furfur.* Mixed with fine white bread to render it laxative; a decoction of it, white drink, common mash, used as a restorative, and alterative for horses.

*TRITICUM REPENS. (E. B. 909.) *Gramen officinarum*, *Couch grass*, *Creeping wheat grass.*

Fl. June, September. Perennial. Fields and waste places. Root used in pectoral decoctions. (G.)

ZEA. (Endl. Gen. Pl. 80.)

ZEA MAYS. *Zea*, *Bhoota mukha*, *Formentone*, *Indian corn*, *Meliconi*, *Maize*, *Turkey corn.* Asia.

Young ears roasted for food; ripe grain made into flour; used by biscuit bakers. (G.)

ZIZANIA. (Endl. Gen. Pl. 78.)

ZIZANIA AQUATICA. *Canada rice.* N. America.

Bears the cold better than any other species of grain, and would probably become the bread-corn of the north beyond the latitudes in which oats grow freely from its productiveness, but that its seeds do not ripen all at one time. (G.)

ORDER 166. XYRIDEÆ. (Lindl. Nat. Syst. 338. Endl. Gen. Pl. 123.)

Calyx glumaceous, three-leaved; *corolla* petaloid, three-petalled; *fertile stamens* three, inserted upon the claws of the petals; *anthers* turned outwards, two-celled, sterile; *stamens* alternate with the petals; *ovary* single; *style* trifid; *stigmas* obtuse, multifid, or undivided; *capsule* one-celled, three-valved, many-seeded, with parietal placentæ; *seed* with the *embryo* on the outside of the *albumen*, and at the end most remote from the *hilum*. *Herbaceous plants* with fibrous *roots*; *leaves* radical, ensiform, with dilated, equitant, scarious bases; *flowers* in terminal, naked, imbricated heads. (Lindl.)

XYRIS. (Endl. Gen. Pl. 124.)

XYRIS INDICA. East Indies.

The natives of Bengal consider this of great value, because they think it an easy, speedy, and certain cure for the ringworm. Rheide says the leaves are used for this purpose mixed with vinegar; and the leaves and roots, boiled in oil, are taken against leprosy. (L.) Also against the itch. (Agardh.)

ORDER 167. PISTIACEÆ. (Lindl. Nat. Syst. 367. De Cand. Bot. Gal. (*Lemnaceæ*) 532.)

Flowers two, naked, enclosed in a spathe; *male stamens* definite; *female ovary* one-celled, with one or more erect ovules; *style* short; *stigma* simple; *fruit* membranous, or capsular, not opening, one or more seeded; *seeds* with a fungous testa, and a thickened indurated foramen; *embryo* either in the axis of fleshy albumen, and having a lateral cleft for the emission of the plumule, or at the apex of the nucleus. *Floating plants* with very cellular, lenticular, or lobed *stems*, and *leaves* confounded; *flowers* appearing from the margin of the stems. (L.)

LEMNA. De Cand. Bot. Gal. 532. Endl. Gen. Pl. (*Najadeæ*) 232.)

*LEMNA MINOR. (E. B. 1095.) *Lens palustris*, *Duck's meat*, *Lesser duckweed.*

Fl. July. Annual. Stagnant waters.

*LEMNA POLYRRHIZA. (E. B. 2458.) *L. major*, *Greater duckweed.*

Are used externally as coolers.

PISTIA. (Endl. Gen. Pl. (*Aroideæ*) 233.)

PISTIA STRATOITES. The Tropics.

The whole plant is acrid. In Jamaica it communicates this quality to the water-tanks in which it grows, and is said to give rise to the bloody flux. (Browne.) The Hindoos consider the decoction demulcent and cooling, and prescribe it in dysuria; the leaves are also made into a poultice for the piles. (L.)

ORDER 168.—BALANOPHOREÆ. (Endl. Gen. Pl. 72. Lindl. Nat. Ord. 393.)

Flowers monœcious, collected in dense heads, which are roundish or oblong, usually bearing both male and female flowers, but occasionally having the sexes distinct, the receptacle covered with scales or setæ, variable in form, here and there bearing also peltate thick scales; rarely naked. *Male flowers* pedicellate; *calyx* deeply three parted, equal, spreading, with somewhat concave segments; *stamens* 1—3, (seldom more,) epigynous, with both united filaments and anthers, (cynomorium and lophophytum distinct,) the latter three. *Female flowers:* *ovary* inferior, 1—2 celled, 1—2 seeded, crowned by the limb of the calyx, which is either marginal, and nearly inverted, or consists of from two to four unequal leaflets; *ovule* pendulous; *style* one, seldom two, filiform, tapering; *stigma* simple, terminal, rather convex; *fruit* one-celled, containing numerous spores collected in a bag resembling a solitary seed; *albumen* globose, fleshy, cellular, whitish, very large; *embryo* very minute in proportion to the albumen, roundish, whitish, enclosed in a superficial excavation, undivided. *Fungus-like plants* parasitical upon roots; *roots* fleshy, horizontal, branched; *stem* naked, or covered by imbricated scales.

CYNOMORIUM. (Endl. Gen. Pl. 74.)

CYNOMORIUM COCCINEUM. *Scarlet mushroom.* Greece, the Levant.

Styptic, ℈j. in wine. (G.) *Cynomorium,* the old *Fungus melitensis,* is an astringent. (L.)

ORDER 169. CYCADACEÆ. (Lind. Nat. Syst. 312. Endl. Gen. Pl. 70.)

Flowers diœcious, terminal. *Males* monandrous, naked, collected in cones, each floret consisting of a single scale, (or anther,) bearing the pollen on its under surface in two-valved cases, which adhere in clusters of two, three, or four. *Females* either collected in cones, or surrounding the central axis, but in the form of contracted leaves, without pinnæ, bearing the ovules on their margins; *ovules* solitary, naked, with no other pericarp than the scale or contracted leaf upon which they are seated; *embryo* in the midst of a fleshy or horny albumen; *radicle* next the apex of the seed, from which it hangs by a long funiculus, with which it has an organic connexion. *Trees* with a simple cylindrical trunk, increasing by the development of a single terminal bud, and covered by the scaly bases of the leaves; the wood consisting of concentric circles, the cellular zones between which are exceedingly loose, the ligneous tissue having the tubes marked by circular disks; *leaves* pinnated, not articulated, having a gyrate vernation. (L.)

CYCAS. (Endl. Gen. Pl. 71.)

CYCAS CAFFRÆA. *Meal bark-tree.*

Pith of the trunk made into *Sago.* (G.)

CYCAS CIRCINALIS. East Indies.

A kind of *Sago* is said to be produced by the interior of the stem, but not the true *Sago* of the shops, which is obtained from *Sagus inermis:* the fruit is eaten in the Moluccas, and a kind of flour of bad quality is procured from the kernels pounded in a mortar; it also yields a clear transparent gum, something like tragacanth. (L.)

CYCAS REVOLUTA. Japan.

The wounded stem, leaves, and fruit, abound in a white transparent mucilage, which hardens into a sort of gum; it is reported that a kind of *Sago* is procured from the cellular substance occupying the interior of the stem; it is said by Thunberg that this is "supra modum nutriens," and held in the highest esteem; soldiers are able to exist on a very small quantity of it, and it is contrary to the laws of Japan to take the trees out of the country; the nuts are also eatable. (L.)

ZAMIA. (Endl. Gen. Pl. 71.)

ZAMIA ANGUSTIFOLIA.	West Indies.
ZAMIA DEBILIS.	West Indies.
ZAMIA FURFURACEA.	West Indies.
ZAMIA MEDIA.	West Indies.
ZAMIA PUMILA.	West Indies.
ZAMIA TENIUS.	West Indies.

One of the best kinds of *Arrowroot* is prepared in the Bahamas from the trunk of some species of this genus, but from which is unknown; no doubt some one of the preceding, all of which are West Indian. (L.)

DIVISION 2.

CELLULARES, OR FLOWERLESS PLANTS.

(*Acotyledons, or Acrogens.*)

Plants composed chiefly of cellular tissue; spiral vessels for the most part absent; sexual organs absent; reproduced by spores or sporules.

CLASS 1.—FILICOIDEÆ.

ORDER 170.—EQUISETACEÆ. (De Cand. Bot. Gal. 534. Endl. Gen. Pl. 58.)

Fructifications terminal, in spikes or catkins, consisting of peltate polygonous scales, on the under side of which are from 4 – 7 involucres, which open longitudinally, and contain numerous globose bodies, (capsules,) enfolded by four filaments, clubbed at their extremities (which some take for *stamens*); *stems* rigid, leafless, jointed, striated, the articulations sheathed at the base; *branches*, if any, mostly whorled, and as many of them will be found as there are striæ upon the stem, and teeth to the sheath, if the teeth do not continue more or less combined. (Hooker.)

EQUISETUM.

*EQUISETUM ARVENSE. (E. B. 2020.) *E. minor, Canda equina minor, Corn horse tail.*

Fl. April. Perennial. Corn-fields and road sides.

*EQUISETUM FLUVIATILE. (E. B. 2022.) *Equisetum cauda equina, Horse-tail, Great water horse-tail.*

Fl. April. Perennial. Muddy lakes, sides of rivers and pools.

*Equisetum palustre. (E. B. 2021.) *Marsh horse-tail.*

Perennial. Boggy soils.

Astringent and vulnerary. (G.) Have been recommended as diuretics and emmenagogues, but are not now used.

*Equisetum hyemale. (E. B. 915.) *E. majus, Dutch rushes, Rough horse tail.*

Fl. July, August. Boggy grounds, middle and north of England.

Epidermis is formed of silica, used to polish wood and metals; imported from Holland. (G.)

ORDER 171.—LYCOPODIACEÆ. (De Cand. Bot..Gal. 543. Endl. Gen. Pl. 69.)

Fructifications crustaceous, sessile, either in the axillas of the leaves, then said to be axillary, or of the bracts, and then said to be spiked; *capsules* either uniform, with many seeds, or of two forms; the more common one (possibly the male) filled with spherical pulverulent globules; the other occurring more rarely, (perhaps the female,) containing spherical sub-scabrous *seeds,* marked with three prominent ribs beneath.

Lycopodium. (De Cand. Bot. Gal. 543. Endl. Gen. Pl. 69.)

Lycopodium clavatum. (E. B. 224.) *Lycopodium, Muscus clavatus, Common club moss.*

Fl. May, November. Perennial. Heathy pastures.

Herb astringent, restores ropy wine in a few days; pollen very inflammable; used in theatres to imitate lightning, by its being thrown across the flame of a candle; repels water so strongly, that if it be strewed upon a basin of that fluid, the hand may be plunged to the bottom without being wetted; hence females employed in delicate works use it to keep their hands free from sweat; used also to roll up bolusses and pills; also in the plica polonica. (G.) The decoction of the plant is said to be more serviceable than any other known means in removing plica polonica; the powder is also used to prevent excoriation in children. (L.)

Lycopodium rubrum. South America.

This has been lately sent from the Caraccas under the name of *Atum condinadum*, as a medicinal plant, along with *Cuichunchulli*, but its use is not known in this country. Its bright red colour is very remarkable. (L.)

*Lycopodium selago. (E. B. 233.) *Selago, Muscus erectus, Fir club moss, Upright fir moss.*

Fl. May, November. Perennial. Heathy and stony places in mountainous countries.

Violently emetic and purgative, fit only for robust constitutions, which can bear rough medicines; used by the country girls in the north to procure abortion; the decoction is employed as a wash to destroy lice in swine and cattle. (G.) In the highlands of Scotland it is made into an irritating ointment, which is applied with advantage to the neighbourhood of the eyes as a counter-irritant; this unguent is also employed to dress foul ulcers, and might be used to keep blisters open instead of Savin; internally administered, the Selago acts violently as an emetic and cathartic; the highlanders, we are told, notwithstanding, give it in infusion, but if the dose is not small, it is followed by serious giddiness and convulsions. Linnæus says the Swedes find the decoction serviceable as a detergent lotion, and in destroying the vermin that infest swine and other animals; Dr. Winkler says its effects appear to be sometimes irritant, but more generally narcotic in their nature. (L.)

ORDER 172.—FILICES. (De Cand. Bot. Gal. 536. Endl. Gen. Pl. 58.)

Fructification clustered; the *capsules* (*thecæ*) collected into clusters (*sori*) of various shapes; *sori* generally covered with an involucre, (*indusium*,) sometimes naked, situated on the under surface or margin of the frond, rarely spiked or racemed (only of one kind upon the same species); *? male flower*, *? anthers*, very small, scattered, apparent in the scarcely unfolded leaves, covered with a thin membrane; *female flower*, *capsule* (*theca*) one-celled, surrounded with an elastic ring, rarely two-valved, filled with very minute and numerous seeds. *Perennial plants*, with alternate *leaves*, (*fronds*,) which are often lobed, or much divided, and while young rolled up in a circinate manner from apex to base; sweetish, astringent, and pectoral; a ley of the ashes of most of the species has been used as a wash to promote the growth of the hair, from the alkali contained in them stimulating the skin, whence they have been called capillary herbs.

ACROSTICHUM. (Endl. Gen. Pl. 59.)

ACROSTICHUM HUACSARO. Peru.

This plant is called *Huacsaro* in Peru, and *Cataguala Indiana*, or *Cordoncillo*, by the Spanish settlers; the rhizoma in cold infusion and decoction yields a red colour, and a slight astringent taste; very inferior in action to the true *Calaguala* (*Polypodium C.*). (L. ex Ruiz.)

ADIANTUM. (De Cand. Bot. Gal. 541. Endl. Gen. Pl. 61.)

ADIANTUM ÆTHIOPICUM. *Cape of Good Hope maiden hair.* Africa.

Used as an aromatic astringent.

*ADIANTUM CAPILLUS VENERIS. (E. B. 320.) *A. verum*, *A. vulgare*, *Capillus veneris*, *Maiden hair.*

Fl. May, November. Perennial. Moist rocks and walls near the sea. Rare.

A fine pectoral, slightly astringent; the decoction is a powerful emetic. (G.) The rhizoma has these qualities; mixed with syrup it forms capillaire. (L.)

Adiantum melano caulon. *Peacock's tail Maiden hair.* India.

Used in India for *Maiden hair.* (G.)

Adiantum pedatum. *Capillus veneris Canadensis, Canada maiden hair.* North America.

Used for *Maiden hair.* (G.) According to Smith, it is this species that is used in the manufacture of *Capillaire*, and not the C. veneris, but as it does not grow in the south of Europe, this does not appear to be correct. (L.)

Asplenium. (De Cand. Bot. Gal. 539. Endl. Gen. Pl. 61.)

*Asplenium adiantum nigrum. (E. B. 1950.) *Adiantum nigrum, Black stalked spleenwort, Oak fern.* Banks, an clefts of rocks.

*Asplenium ruta muraria. (E. B. 150.) *A. murale, Adiantum album, Ruta muraria, Salvia vitæ, Tent wort, Wall rue, Spleenwort.* Walls, and clefts of rocks.

*Asplenium trichomanes. (E. B. 576.) *T. adiantum rubrum, Common maiden hair, Common wall spleenwort.* Rocks and walls.

These have all nearly the same qualities as the true maiden hair. (G.) This genus was formerly held to be a sovereign remedy for all diseases of the spleen, and even to destroy it, if employed in excess. (Lou.)

Blechnum. (De Cand. Bot. Gal. 540. Endl. Gen. Pl. 61.)

*Blechnum boreale. (E. B. 1159.) *Lonchitis, Northern hard fern, Rough spleenwort.*

Fl. May, November. Perennial. Woods and heaths.

Root aperient and diuretic.

Botrychium. (De Cand. Bot. Gal. 536. Endl. Gen. Pl 66.)

*Botrychium lunaria. (E. B 318.) *Lunaria, Ophioglossum lunaria, Osmunda lunaria, Moon root, Moon wort.*

May, September. Perennial. Dry mountain pastures.

Leaves astringent.

Cistopteris. (Endl. Gen. Pl. 62.)

*Cistopteris dentata. *Var. β. Augustata, Adiantum album, Cyclopteris rhætica, Polypodum rhæticum, White oak fern, Toothed bladder fern.* North of England and Wales.

*Cistotperis fragilis. (E. B. 1587.) *Adiantum album, Cyatrea fragilis, Cyclopteris Fragilis, Polypodium fragile, Brittle bladder fern, Brittle cup fern.* Rocks and walls in the mountainous parts of Great Britain

Used for *Maiden hair.*

GRAMMITIS. (De Cand. Bot. Gal. 537. Endl. Gen. Pl. 59.)

*GRAMMITIS CETERACH. (E. B. 1244.) *Asplenium ceterach, A. scolopendrium, Blechnum squamosum, Ceterach officinalis, Scolopendrium ceterach, Ceterach, Loradilla, Milt waste, Scaly grammitis, Spleenwort.* Rocks and walls in limestone countries.

Astringent.

HEMIONITIS. (Endl. Gen. Pl. 59.)

HEMIONITIS. . . . . *Asplenium hemionitis, Mule's fern.*

Astringent.

NEPHRODIUM. (De Cand. Bot. Gal. (*Polystichum*) 538. Endl. Gen. Pl. 62.)

*NEPHRODIUM MAS. (E. B. 1458 and 1949.) *Aspidium filix mas, Polypodium filix mas, Nephrodium crenatum, Filix mas, Male fern, Blunt shield fern.*

Fl. May, November. Perennial. Woods and shady banks.

Root slightly bitter, astringent, a good vermifuge, in doses of ʒj. to ʒiij.; expelling the tænia, either by the assistance of a strong purge, or by repeating the powdered root for some time; it is also boiled in ale to flavour it. (G.) *Rhizoma* used as an anthelmintic. The *Oil of fern*, extracted by ether, is the most efficacious form in which it is administered. (L.) The dose of the recently prepared powder is from one to three drachms; the oil, an ethereal extract, is also much employed on the continent; dose from half a drachm to a drachm, in the form of emulsion, electuary, or pills. (Pereira.)

OPHIOGLOSSUM. (De Cand. Bot. Gal. 536. Endl. Gen. Pl. 66.)

*OPHIOGLOSSUM VULGATUM. (E. B. 108.) *O. spicatum, Common adder's tongue.*

May, June. Perennial. Moist pastures, and in woods.

Used to form a celebrated ointment for wounds. (G.)

OSMUNDA. (De Cand. Bot. Gal. 536. Endl. Gen. Pl. 65.)

*OSMUNDA REGALIS. (E. B. 209.) *Filix florida, Ophioglossum osmunda, Flowering fern, Osmund royal.*

Fl. July, September. Perennial. Boggy places, wet margins of woods.

The young shoots, made into a conserve, are a specific for the rickets; root, boiled in water, makes a kind of starch, used to stiffen linen. (G.) Rhizoma tonic and styptic, and said to have been found serviceable in cases of rachitis. (L.)

POLYPODIUM. (De Cand. Bot. Gal. 537. Endl. Gen. Pl. 60.)

POLYPODIUM CALAGUALA. *Calaguala.* Peru.

Root sudorific. (G.) Called *Callahuala*, or *Calaguala*, in Peru. The rhizoma, when dried, has great deobstruent, sudorific, anti-venereal, and febrifugal virtues; it is used in decoction or infusion, allowing one ounce of the rhizoma to six pints of water, boiled down to three pints; seldom to be had genuine in Europe; if genuine, it is extremely bitter. (L. ex Ruiz.) Diaphoretic and diuretic, employed in rheumatism and syphilis. (Pereira.)

Peru.

Polypodium crassifolium.

Called *Puntu puntu* in Peru. The rhizoma in infusion and decoction is employed as a sudorific; the samples should be compact, heavy, difficult to cut, of even fracture, red within, rusty or chestnut-coloured without. (L. ex Ruiz.)

*Polypodium dryopteris. (E. B. 616.) *Dryopteris, Tender three-branched polypody, Small oak fern.*

Fl. July, September. Perennial. Dry stony places.

Acrid, septic.

*Polypolium vulgare. (E. B. 114.) *P. quercinum. Common polypody, Polypody of the oak.*

Fl. May, November. Perennial. Rocks, walls, and trunks of trees.

Root saccharine and slightly purgative; an infusion, ʒvj. in half a pint of hot water, may be taken at twice; by long boiling becomes bitter. (G.)

Pteris. (De Cand. Bot. Gal. 540. Endl. Gen. Pl. 61.)

*Pteris aquilina. (E. B. 1679.) *Filix, Filix fœmina, Common brake, Female fern.*

Fl. June. October. Perennial. Woods, heaths, or stony and sandy soils.

Root vermifuge; and in time of scarcity has been manufactured into a coarse kind of bread. (G.)

Scolopendrium. (De Cand. Bot. Gal. 540. Endl. Gen. Pl. 62.)

*Scolopendrium vulgare. (E. B. 1150.) *Asplenium Scolopendrium, Blechnum lignifolium, Lingua cervina, Phyllitis Scolopendrium, Hart's tongue.*

Fl. May, November. Perennial. Moist shady banks.

Astringent, vulnerary, pectoral, and used in spitting of blood, fluxes, and swelling of the spleen. (G.)

CLASS II.

MUSCOIDEÆ.

ORDER 173.—MUSCI. (De Cand. Bot. Gal. 545. Endl. Gen. Pl. 46.)

Erect or creeping terrestrial or aquatic cellular *plants,* having a distinct axis of growth, destitute of a vascular system, and covered with minute, imbricated, entire, or serrated leaves; *reproductive organs* of two kinds, viz. 1st. *axillary bodies,* cylindrical or fusiform stalked sacs, containing a multitude of spherical or oval particles, which are emitted upon the application of water; 2nd. *thecæ,* hollow urn-like cases, seated upon a *seta* or stalk, covered by a membranous *calyptra,* closed by a *lid* or *operculum,* within which are one or more rows of cellular rigid processes, called collectively the *peristome,* and separately *teeth,* which are always some multiple of four, and combined in various degrees; the centre of the theca is occupied by an *axis* or *columella,* and the space between it and the sides of the theca is filled with *sporules; sporules* in germination protruding confervoid filaments, which afterwards ramify and form an axis of growth at the point of the ramifications. (Lind. Nat. Syst.)

HYPNUM. (De Cand. Bot. Gal. 554. Endl. Gen. Pl. 55.)

*HYPNUM SERICEUM. (E. B. 1445.) *Leskia sericea, Usnea cranii humani, Moss of a dead man's skull, Silky hypnum.*

Used in hæmorrhages.

POLYTRICHUM. (De Cand. Bot. Gal. 546. Endl. Gen. Pl. 54.)

*POLYTRICHUM VULGARE. *Polytrichum, Adiantum nigrum, Golden locks.*

Sudorific, pulmonary.

SPHAGNUM. (De Cand. Bot. Gal. 581. Endl. Gen. Pl. 47.)

*SPHAGNUM. . . . . *S. commune, S. palustre, Bog moss, Old wives' sow.*

Scarcely combustible; used to stop cracks in chimneys; very retentive of moisture; used to pack up plants for exportation to distant countries. (G.)

ORDER 174.—HEPATICÆ. (De Cand. Bot. Gal. 584.) Smith, Eng. Fl. vol. v. 97.)

Plants growing in the earth, or on trees, or in damp places, composed entirely of cellular tissue, emitting roots from their under side, and consisting of an axis or stem which is leafless, and bordered by a membranous expansion; such expansions sometimes unite at their margins, so as to form a broad lobed *thallus? reproductive organs* consisting either of a peltate stalked receptacle, bearing *thecæ* on its inner surface, or of sessile naked *thecæ,* either immersed or superficial; besides there are in *Marchantia* peltate receptacles, plain on the upper surface, and having oblong bodies embedded in the disk, and also little open cups, sessile on the upper surface, and containing minute green bodies, (*gemmæ*,) which have the same power of producing new plants as *sporules*, and in *Anthoceros*, small cup-like receptacles, containing minute, spherical, pedunculated, reticulated bodies. (Lind.)

MARCHANTIA. (Lind. Nat. Syst. 414. Smith, Eng. Fl. vol. v. 101.)

*MARCHANTIA CONICA. (E. B. 504.) *Hepatica vulgaris*, *Liver wort.* Sides of mill-ponds and shady banks.

The bruised fronds are singularly fragrant, resembling bergamot. (Hooker.)

*MARCHANTIA POLYMORPHA. (E. B. 110.) *Hepatica fontana*, *H. polymorpha*, *H. stellata*, *Star liver wort.* Moist and wet situations, and dry spots when shaded.

Both of these are aperitive, acrid, astringent; used in diseases of the liver. (G.)

CLASS III

FUNGOIDEÆ.

ORDER 175.—FUNGI. (De Cand. Bot. Gal. 728. Endl. Gen. Pl. 16.)

Plants consisting of a congeries of cellules, among which filaments are occasionally intermixed, increasing in size by addition to their inside, their outside undergoing no change after its first formation; chiefly growing upon decayed substances, frequently ephemeral and variously coloured; *sporules* lying either loose among the tissue, or enclosed in membranous cases called *sporidia*.

Frequently poisonous; the best remedy in this case, after immediate vomiting by tickling the fauces and the exhibition of clysters, is ʒj. of ether in a glass of water, with tincture of capsicum. The Russians, however, eat almost every species that are of any size, only stewing them thoroughly, and drinking a glass of brandy after them, and the ancients stewed suspected mushrooms with some twigs of the pear-tree, as an antidote to their bad effects. (G.) There is only one plant of this order of which much use is made for the sake of its medicinal qualities, namely, the *Spermoedia clavus*, or *Ergot*, but there are many nutritious, and a great number of poisonous species. (L.)

AGARICUS. (Endl. Gen. Pl. 40. Smith, Eng. Fl. vol. v. part 2, p. 1.)

*AGARICUS BULBOSUS. *Bulbous agaric.* Woods, and borders of woods.

A very active poison.

*AGARICUS DELICIOSUS. *Orange milked agaric.* Fir woods.

Has yellow milk, and is of exquisite flavour, but must not be confounded with *A. necator*, or *A. theiogalus*, both of which have also yellow milk, and are very poisonous. (G.) From the account given by M. Roques, it should seem that this agaric, however delicious, is not always to be eaten with impunity. (Hooker.)

*AGARICUS EBURNEUS. *Ivory agaric, Mugnaio.* Woods.

Sold for food in the markets of Tuscany.

*AGARICUS FŒTENS. *A. piperatus, Fœtid simple-gilled agaric.* Woods.

Highly acrid, odour very strong and penetrating, empyreumatic, somewhat resembling that of prussic acid, but exceedingly disagreeable.

*AGARICUS CAMPESTRIS. *A. edulis, Common mushroom.*

Under the name of *Mushrooms,* several species of *Agarici pratelli* are supposed to be confounded; *A. campestris* is that mostly eaten in England; all are wholesome. (G.) The most generally used, perhaps, of all agarics, and the safest; it is extensively cultivated. (Hooker.)

*AGARICUS MUSCARIUS. *Fly agaric.* Fir and birch woods.

Infused in milk kills flies; juice rubbed on bedsteads expels bugs; dried and powdered, gr. x. to xxx., with vinegar, cathartic, sudorific; applied externally to ulcers and gangrenes. (G.) Highly narcotic, producing in small doses intoxication and delirium, (for which purpose it is nsed in Kamschatka,) and in larger, death. (Hooker.) For a very curious account of this agaric and its effects, see Lindl. Nat. Syst. p. 423.

*AGARICUS NECATOR. *Deadly milky agaric.* Woods and heaths.

Has yellow milk, and is very poisonous. (G.)

AGARICUS PIPERATUS. Woods.

An ingredient in the *Opiatum antituberculosum,* loses its acrid taste when dressed; eaten.

*AGARICUS PRATENSIS. *Champignon, Scotch bonnets.* Pastures.

Dried and used to savour sauces. (G.)

*AGARICUS PROCERUS. *Large shaggy agaric.* Hedge-banks.

Is the best and most usually eaten of those whose footstalks are furnished with a moveable collar, and whose gills do not melt into a black liquid; none are known to be poisonous. (G.) Taste and smell pleasant; forms on the continent an article of food. (Hooker.)

*AGARICUS SUBDULCIS. *Subacid rufous agaric.* Woods.

Eaten.

*Agaricus theiogalus. *Yellow milked agaric.* Amongst dead leaves.

Very poisonous.

*Agaricus torminosus. *A. piperatus, Bearded pepper agaric.* Woods, heaths, and borders of fields.

Very acrid, but the Russians preserve it in salt, and eat it seasoned with oil and vinegar. (Hooker.)

Agaricus tortilis. *Mousseron de Dieppe.*

Used as food.

Agaricus translucens. *Pivoulade de Saule.*

Eaten by the poor in France along with other agarici with the footstalk on the side, but most are suspicious. (G.)

*Agaricus violaceus. *Blewitts, Violet agaric.* Woods.

Used for making ketchup. (G.)

Boletus. (Endl. Gen. Pl. 40. Smith, Eng. Fl. vol. v. part 2, p. 147.)

Boletus æreus. *Black champignon.*

Eaten on the continent.

*Boletus edulis. *Cepatelli, Esculent boletus.* Woods.

Eaten on the continent, particularly by the Tuscans. (G.) Though neglected in this country, it appears to be a most valuable article of food; it resembles very much in taste the common mushroom, and is quite as delicate, and might be used with much advantage, as it abounds in seasons when a mushroom is scarcely to be found: like that, it can be cultivated, but by a much more simple process, as it is merely necessary to moisten the ground under oak-trees with water in which a quantity has been allowed to ferment; this method is practised with success in France. (Hooker.)

Boletus laricis. *B. purgans, Agaricus, Agaric of the larch, Male agaric.* Under or near larches.

Grows in Tartary on the larch; the interior part has been used as a drastic purge; dose ℈j. to ʒij. in powder, with some ginger; or an infusion of double that weight. Imported from Turkey. (G.)

*Boletus scaber. *B. aurantiacus, Leccino, Scurfy boletus.*

Eaten on the continent, particularly by the Tuscans.

*Boletus subtomentosus. *B. chrysenteron, Subtomentose boletus.* Woods.

Eaten, at least while young. (G.) Eaten in Germany, according to Trattenick, but he does not give a very favourable account, and recommends only young specimens, old ones having frequently proved injurious. M. Roques considers the use of it as hazardous. (Hooker.)

Bovista. (Smith, Eng. Fl. vol. v. part 2, p. 302.)

Bovista nigrescens. *Lycoperdon bovista, Crepitus lupi, Bullfists, Mollipuffs, Puff-balls.* Heaths and dry pastures.

Narcotic; its smoke stupifies bees, but does not kill them; its very subtile seminal dust is used as a styptic. (G.)

CANTHARELLUS. (Endl. Gen. Pl. 40.)

CANTHARELLUS CIBARIUS. *Agaricus cantharellus, Merulius cantharellus, Chantarelle.* Woods.

Is not a delicate species, but safe, as being unlike any poisonous kind. (G.) Smell very agreeable, like that of ripe apricots, taste agreeable, but pungent; it forms a main article of food in some districts of Europe, though dangerous when eaten raw. (Hooker.)

CLAVARIA. (Endl. Gen. Pl. 36. Smith, Eng. Fl. vol. v. part 2, p. 173.)

*CLAVARIA CORALLOIDES. *C. cinerea, Goat's beard mushroom, Grey goat's beard, Coral clavaria.*

Eaten, and very safely, as from its coralline appearance it has not the least resemblance to any poisonous kinds, but its flesh is rather cottony, and its flavour very slight.

DÆDALEA. (Endl. Gen. Pl. 39. Smith, Eng. Fl. vol. v. part 2, p. 133.)

*DÆDALEA SUAVEOLENS *Boletus suaveolens, Sweet scented dædalea.* On trunks of willows.

Used in phthisis, ℈j. in powder four times a day, made up into an electuary. (G.) Easily distinguished by its odour, (when young,) which resembles aniseed. (Hooker.)

DEMATIUM. (De Cand. Bot. Gal. 933. Smith, Eng. Fl. vol. v. part 2, p. 337.)

DEMATIUM GIGANTEUM. *Xylostroma giganteum, Oak leather.*

Found in the cracks of oaks; used in Iceland as a dressing for ulcers, and in Virginia to spread plasters on. (G.)

ELAPHOMYCES. (Smith, Eng. Fl. vol. v. part 2, p. 306.)

*ELAPHOMYCES GRANULATUS. *Boletus, Lycoperdon cervinum, Deer balls, Granulated elaphomyces.* Dry heaths.

Aphrodisiac, and increases the milk. (G.)

EXIDIA. (Smith, Eng. Fl. vol. v. part 2, p. 217.)

*EXIDIA AURICULA JUDÆ. *Auricula, Judæ, Fungu sambuci, Peziza auricula, Jew's ears.* On living trees, especially elder.

Grows on the elder; used, soaked in milk or vinegar, as a gargle in the quinsey, &c.

FISTULINA. (Smith, Eng. Fl. vol. v. part 2, p. 154.)

*FISTULINA HEPATICA. *Boletus hepaticus, Hypodrys hepaticus, Bull's liver, Bull's tongue.* On oak, ash, walnut, &c.

Almost the only parasitic mushroom that is eaten. (G.) Much esteemed in Austria as an article of food. (Hooker.)

HELVELLA. (Endl. Gen. Pl. 38. Smith, Eng. Fl. vol. v. part 2, p. 184.)

*HELVELLA LACUNOSA. *H. mitra, Cinereous helvella.* Eaten abroad.

HYDNUM.

*HYDNUM AURISCALPIUM. *Brouquichons.*

*HYDNUM CORALLOIDES.

*HYDNUM ERINACEUS. *Hedgehog hydnum, Hedgehog mushroom.*

*HYDNUM REPANDUM. *Cheverette.*

Are all eaten. (G.) Much used for food on the continent, especially in Austria. (Hooker.)

MORCHELLA. (Endl. Gen. Pl. 38. Smith, Eng. Fl. vol. v. part 2, p. 182.)

*MORCHELLA ESCULENTA. *Helvella esculenta, Common morell.* Woods, orchards, cinder-walks, &c.

Wholesome and agreeable, as are all the other morchellæ; principally imported dry from Italy; used as a sauce. (G.) Esteemed everywhere as a valuable article of food. (Hooker.)

PACHYMA. (Endl. Gen. Pl. 24. Lindl. Nat. Syst. 419.)

PACHYMA COCOS. *Sclerotium cocos.*

Used in Carolina "Ad morbos sanandos." (L. ex Fries.)

PACHYMA TUBER REGIUM. Moluccas.

Used in the medicine of eastern nations against diarrhœa, pains in the face, fevers, &c.; called *Uba radja*, or *Culat batu*, by the Malays. (L. ex Fries.) The Chinese have a fungus called *Hoelen*, the size of a child's head, and considered a valuable medicine, which is supposed to be another species of the genus *Pachyma*.

PHALLUS. (Endl. Gen. Pl. 31. Smith, Eng. Fl. vol. v. part 2, p. 226.)

*PHALLUS IMPUDICUS. *Fungus phalloides, Stinkhorn.*

Intolerably fœtid at a distance, so that it is oftener smelt than seen, being supposed to be some carrion, and therefore avoided; when near, it has only the pungency of volatile salts; its odour soon fills a whole house; applied externally to painful limbs. (G.)

POLYPORUS. (Smith, Eng. Fl. vol. v. part 2, p. 134.)

*POLYPORUS FOMENTARIUS. *Boletus fomentarius, B. ungulatus, Real amadou, German tinder.* On oak, birch, &c.

*POLYPORUS IGNIARIUS. *Boletus igniarius, Hard Amadou, Spunk.* On willow, cherry, plum-trees, &c.

These, when softened by beating, are used for stopping blood; soaked in a ley of saltpetre, and dried, they are used as tinder; imported from Germany. (G.)

*POLYPORUS SULPHUREUS. *Boletus sulphureus.* Trunks of trees.

On drying evolves needle-like crystals of oxalic acid nearly pure, and is consequently poisonous. (G.) Dry specimens are often incrusted with crystals of Binoxalate of potash. (Hooker.)

RHIZOPOGON. (Smith, Eng. Fl. vol. v. part 2, p. 229.)

RHIZOPOGON ALBUS. *Tuber album.* Sandy ground in woods. Properties the same as those of *Tuber cibarium.*

SPERMOEDIA. (Endl. Gen. Pl. 16. Smith, Eng. Fl. vol. v. part 2, p. 226.)

SPERMOEDIA CLAVUS. *Ergotætia abortifaciens, Secale cornutum, Sclerotium clavus, Ergot.* On grains of rye, &c.

A dangerous poison if taken into the body mixed with food, producing violent spasmodic convulsions, and dry gangrene; if taken in doses of as much as two drachms, giddiness, headache, and flushed face, are produced, together with pain and spasms in the stomach, nausea and vomiting, with colic, purging, and a sense of weight and weariness of the limbs; in pregnant women it is found to excite uterine action in a very remarkable manner, bringing on abortion, or facilitating parturition; hence *Ergot* is called by Dr. Pereira a parturifacient; in medicine, it is extensively employed to promote uterine pains during the process of parturition, to produce the expulsion of the placenta, contraction of the uterus, and to stop uterine hæmorrhage. To a more limited extent it has been used, and as it is said, with advantage, in epistaxis, hæmoptysis, hæmaturia, and hæmatemesis, to expel clots and polypi from the uterus, leucorrhœa, puerperal convulsions, and amenorrhœa. *Ergot* is said to be adulterated with plaster of Paris casts coloured to resemble it. In the last edition of the London Pharmacopœia, it is referred to the Acinula clavus of *Fries Syst. Mycol,* but Fries has no such plant in any of his works, and the only species of Acinula known, A. candicans, is found on the rotten leaves of the common alder, and among melting snow. (Lindl.) *Vide* Secale.

SPERMOEDIA MAYDIS. In Colombia in the female flowers of Zea Mays.

An *Ergot* attacks the Indian corn in Colombia, and is stated by Roulin to cause a loss of the hair and teeth on the part of both animals and men that eat it; mules fed upon it lose their hoofs, and poultry lay eggs without shell; its action upon the uterus is said to be as powerful as that of the *Rye ergot,* or perhaps more so. Maize thus infected is called *Mais peladero.* (Lindl.)

TUBER. (Endl. Gen. Pl. 30. Smith, Eng. Fl. vol. v. part 2, p. 227.)

TUBER ALBIDUM. *Branchette.*

*TUBER CIBARIUM. *T. gulosorum*, *Tubera terræ*, *Licoperdon tuber*, *Trubs*, *Truffles.* Buried in the ground in beech woods.

TUBER GRISEUM. *Piedmont truffle*, *Black truffle with white flesh.*

*TUBER MOSCHATUM. *Musk-scented truffle.* Very rare.

TUBER RUFUM. *Rosetti.*

Are all used as delicate sauces to soups and the like; T. griseum has a slight odour of garlic; the *Truffles* grow underground, and are turned up, or pointed out by hogs or dogs trained for that purpose. Imported from France or Italy, either dry or preserved in olive oil. (G.)

ORDER 176.—LICHENES. (Lindl. Nat. Syst. 426. Smith's Eng. Fl. vol. v. 129.)

Perennial plants, often spreading over the surface of the earth, or rocks, or trees in dry places, in the form of a lobed and foliaceous, or hard and crustaceous, or leprous substance, called a *thallus*; this *thallus* is formed of a cortical and medullary layer, of which the former is simply cellular, the latter both cellular and filamentous; in the crustaceous species, the cortical and medullary layers differ chiefly in texture, and in the former being coloured, in the latter colourless; but in the fruticulose or foliaceous species, the medulla is distinctly floccose, in the latter occupying the lower half of the thallus, in the former enclosed all round by the cortical layer; *reproductive matter* of two kinds, 1. *sporules* lying in membranous tubers, (*thecæ*,) immersed in nuclei of the medullary substance, which burst through the cortical layer, and colour and harden by exposure to the air in the form of little disks called *shields*; 2. the separated cellules of the medullary layer of the *thallus.*

The softer kinds are slightly bitter, and used in affections of the lungs; those resembling a chalky crust are used in dyeing.

BORRERA. (Lindl. Nat. Syst. 429. Smith, Engl. Fl. vol. v. p. 222.)

*BORRERA FLAVICANS. (E. B. 2113.) *Lichen flavicans*, *L. vulpinus*, *Brass wire borrera.* On fruit-trees, south of England.

Used to poison wolves; dyes wool yellow.

*BORRERA FURFURACEA. (E. B. 984.) *Lichen furfuraceus*. *Branny borrera.* On old trees.

Reputed to be an astringent and febrifuge.

CETRARIA. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 220.)

*CETRARIA ISLANDICA. (E. B. 1330.) *Cladonia islandica*, *Lichen islandicus*, *Muscus catharticus*, *Muscus pulmonarius*, *Lichen*, *Iceland moss.* In exposed situations on the ground.

Slightly bitter, used as food in Iceland, either made into bread or boiled in water, the first water being rejected. The bitterness of this substance is removed by maceration in cold water; demulcent and nutritious, it is easy of digestion, hence it has been recommended in phthisis. (G.) Notwithstanding the presence of so large a quantity of bitter principle in this, that Sir John Franklin and his party could hardly eat it, although in a state approaching starvation, it is a favourite substance with some practitioners in affections of the pulmonary and digestive organs, particularly in phthisis, chronic catarrh, dyspepsia, and chronic dysentery; it is frequently given to sick persons as an alimentary substance, the bitter having been first removed by washing in a weak alkaline solution; the aqueous decoction, if made sufficiently strong, forms a jelly when cold; when flavoured with a little white wine it is an exceedingly pleasant diet. (Lindl. ex Pereira.)

*CETRARIA NIVALIS. (E. B. 1994.) *Lichen nivalis*, *Snow cetraria*. Summits of the mountains in north of Scotland.

Has similar properties to the last.

CLADONIA. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 234.)

*CLADONIA RANGIFERINA. (E. B. 173.) *Cenomyce rangiferina*, *Lichen rangiferinus*, *Rein-deer moss*. Moors, heaths, &c.

Has an agreeable smell; used for making *Cyprus powder* or *French scent-bags*. (G.) One of the most nutritious of this order, and nearly free from the bitterness of some of the esculent kinds. (L.)

CLADONIA SANGUINEA. Brazil.

Rubbed down with sugar and water, this is found to be an excellent remedy in Brazil for aphthæ in children. (L.)

*CLADONIA VERMICULARIS. (E. B. 2029.) *Cenomyce vermicularis*, *Lichen vermicularis*. Mountains of North of England.

Used in South America as a stomachic, under the name of *Contrayerva blanca*. (L.)

EVERNIA. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. 224.)

*EVERNIA PRUNASTRI. (E. B. 859.) *Lichen prunastri*, *Muscus arboreus*, *Ragged hoary evernia*. Trunks of trees.

Astringent, pulmonary, very retentive of odours, used as a basis for perfumed powders. (G.) Recommended in pulmonary affections, also as an astringent and febrifuge; it has a peculiar power of imbibing and retaining odours, and is in some request as an ingredient in sweet pots and ladies' sachets. (L.) This lichen was brought into use in Glasgow by the late Lord Dundonald, and employed (during the war) instead of gum in calico printing; it afterwards fell into disuse as a very inferior substitute for that article. (Hooker.)

GYROPHORA. (Lindl. Nat. Syst. 630. Smith, Eng. Fl. vol. v. 217.)

*GYROPHORA CYLINDRICA. *Umbilicaria crinita, Fringed gyrophora.* On mountain rocks.

*GYROPHORA PROBOSCIDEA. (E. B. 2485.) *Lichen proboscideus.* Mountain rocks in highlands of Scotland.

This and the preceding constitute a part of the *Tripe de roche* on which travellers in the arctic regions of America have been forced to live in cases of emergency. It is nutritious, but mixed with a disagreeable bitterness, and productive of severe colic, and other distressing local complaints. (Lind.) *G. cylindrica* is used in Iceland occasionally as food, and more frequently for dyeing woollen cloth of a brownish-green colour. (Hooker.)

*GYROPHORA PELLITUS. (E. B. 931.) *Lichen velleus, Fleecy gyrophora.* On the rocks of northern. mountains.

Has the same qualities as *Cetraria islandica.* (G.)

LECANORA. (Smith, Eng. Fl. vol. v. part 1, p. 186. Lindl. Nat. Syst. (*Parmelia*) 429.)

*LECANORA PARELLA. (E. B. 727.) *Lichen parellus, Auvergne archel, Ground archel, Orseille de terre.* Rocks.

Used like the *Canary archel* in large quantities to make *Litmus.* (G.) Also in dyeing. (L.) Extensively employed in France to produce a dye far superior to that of *Cudbear*, and quite equal to that of *Archill* (*Rocella tinctoria*). (Hooker.)

*LECANORA TARTAREA. (E. B. 1879 and 156.) *Lichen tartareus, Cudbear.* On rocks in alpine countries.

Dyes purple, collected in large quantities for the dyers. (G.) This is the famous *Cudbear*, (so called after Mr. Cuthbert, who first brought it into use,) employed to produce a purple for dyeing woollen yarn. (Hooker.)

PARMELIA. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 198.)

*PARMELIA AQUILA. (E. B. 982.) *Lichen arboreus pullus, L. aquilus, L. pullus, Lichen, Sunburnt parmelia.* Devonshire.

Slightly astringent, used in asthma and old coughs. (G.)

PARMELIA CAPERATA. *Lichen caperatus? Arcell, Stone crottles.* Trunks of trees, rocks, and old pales.

Dyes wool of an orange colour, but if the wool is previously boiled in urine, of a russet brown.

PARMELIA OLIVACEA. (E. B. 2180.) *Lichen arboreus pullus, L. olivaceus, Olive coloured parmelia, True liver wort.* Trees, &c.

Roborant, used in hæmorrhage and old coughs. (G.)

*PARMELIA OMPHALODES. (E B. 604.) *Lichen omphalodes, Arcell corker, Cork kenkerig.* On rocks and stones.

Styptic, dyes wool a reddish-brown, made into balls. (G.)

*PARMELIA PARIETINA. (E. B. 194.) *Lichen parietinus, Yellow wall parmelia.* On trees and walls.

Used as a remedy for intermittent fevers, on account of its bitterness. (L.)

*PARMELIA SAXATILIS. (E. B. 603.) *Lichen saxatilis, Grey stone parmelia, Usnea.* Trees, rocks. and stones.

Astringent, used in hæmorrhages. (G.) In Scotland it is collected abundantly by the peasantry, and used with other species to dye woollen stuffs of a dirty purple. (Hooker.)

PELTIDEA. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 214.)

*PELTIDEA APHTHOSA. (E. B. 1119.) *Lichen aphthosus, Muscus cumutalis.* Moist shady alpine rocks.

A drastic vermifuge. (G.) Said to be purgative and anthelmintic. (L.) So called because Linnæus relates that the Swedish peasants boil it in milk as a cure for the aphthæ or thrush in children. (Hooker.)

*PELTIDEA CANINA. (E. B. 2229.) *Lichen caninus, L. cniereus terrestris, L. terrestris, Muscus caninus, Ash coloured ground liver wort, Canine peltidea.*

Used in hydrophobia. (G.) Formerly employed, at the suggestion of Dr. Mead, as a cure for the bite of a mad dog, whence the specific name. (Hooker)

RAMALINA. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 224.)

*RAMALINA FARINACEA. (E. B. 889.) *Lichen farinaceus, Narrow mealy ramalina.* Trunks and branches of trees.

Yields, like many other species of lichen a mucilage with water, similar to gum arabic. (G.)

ROCELLA. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 221.)

*ROCELLA TINCTORIA. (E. B. 211.) *L. rocella, Fucus, Canary archill, Chinney weed, Dyer's rocella, Herbarchel, Rock moss.* Rocks in South of England, Guernsey, Scilly Islands, &c.

Allays the tickling cough attendant upon phthisis, and from it is manufactured *Litmus.* (G.) This is the famous *Archill,* or *Orchill, Orseille* of the French, which yields the most valuable dye of all this tribe. The English blue broad cloths are first dyed with Archill, which gives their peculiar lustre and purple tint, when viewed in a certain light. (Hooker.)

SCYPHOPHORUS. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 236.)

*SCYPHOPHORUS COCCIFERUS. (E. B. 2051.) *Cladonia coccifera, Lichen cocciferus, Scarlet cup lichen.* Heathy moors.

*SCYPHOPHORUS PYXIDATUS. (E. B. 1393.) *Cladonia pyxidata, Lichen coccineus, L. pyxidatus, Muscus pyxidatus, Cup lichen, Cup moss.* Heathy places and dry woods.

This and the preceding, used in hooping cough, and other complaints of the lungs; dose a teacupful of the infusion, which is generally slightly emetic. (G.) Both have the credit of being astringent and febrifuge. (L.)

STICTA. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 204.)

*STICTA PULMONACEA. (E. B. 572.) *S. pulmonaria, Lichen arborum, L. pulmonarius, Muscus pulmonarius, Pulmonaria arborea, Hazel crottles, Lungwort, Sticta, Oak lungs, Tree lungwort.* Trunks of trees.

Slightly bitter, opening, detersive, useful in diseases of the lungs; dyes wool of a durable orange colour; yields a gum similar to gum arabic. (G.) Employed in pulmonary affections; its nutritious properties resemble those of *Cetraria islandica*; in Siberia it is used for giving a bitter to beer. (L.)

UMBILICARIA. (Lindl. Nat. Syst. 430. Smith, Eng. Fl. vol. v. 219.)

*UMBILICARIA PUSTULATA. (E. B. 1283.) *Lecidea pustulata, Blistered umbilicaria.* On rocks.

May be substituted for allspice, dyes a fine red. (G.)

USNEA. (Lindl. Nat. Syst. 426. Smith, Eng. Fl. vol. v. p. 226.)

*USNEA PLICATA. (E. B. 1354.) *Lichen plicatus, Muscus, M. arboreus, Hairy tree moss, Stringy usnea.* Old trees, &c.

Astringent. (G.)

VARIOLARIA. (Lindl. Nat. Syst. 430. Smith, Eng. Fl. vol. v. p. 168.)

*VARIOLARIA DISCOIDEA. (E. B. 1714.) *V. amara, Lichen discoideus.* On the bark of trees.

Whole plant intensely bitter, has been recommended as a remedy for intermittent fevers. (L.)

*VARIOLARIA FAGINEA. (E. B. 1713.) *V. communis β, Lichen fagineus.* Old beech trees, &c.

Properties the same as the last. (L.) Strongly recommended by M. Braconnot for the production of oxalic acid, of which he found it to contain a considerable proportion; employed for that purpose in France upon a very extensive scale. (Hooker.)

The *Lichen calcareus* of the old authors, dried, powdered, and steeped in urine, dyes a fine scarlet. (L.)

ORDER 177.—ALGÆ. (De Cand. Bot. Gal. 935. Endl. Gen. Pl. 1.)

Leafless flowerless plants, with no distinct axis of vegetation, growing in water, frequently having an animal motion, and consisting either of simple vesicles lying in mucus, or of articulated filaments, or of lobed fronds, formed of uniform cellular tissue; *the productive matter* either altogether wanting, or contained in the joints of the filaments, or deposited in *thecæ* of various form, size, and position, caused by dilatations of the substance of the frond; *sporules* with no proper integument in germination, elongating in two opposite directions. (Lind.)

CHONDRUS. (De Cand. Bot. Gal. 947. Smith, Eng. Fl. vol. v. part 1. p. 301.)

*CHONDRUS CRISPUS. *Fucus crispus*, *Sphærococcus crispus*, *Carrageen*, *Irish moss*. On rocky shores.

Recommended as a popular remedy for pulmonary complaints, dysentery, scrofula, and rickets, given in the form of a decoction, made by boiling an ounce in a pint and a half of water or milk; it is nutrient, demulcent, and emollient. (Pereira.) On the coast of Ireland it is converted into size for the use of house-painters, and also employed in lieu of isinglass in the preparation of creams and other confectionary. (L.)

*CHONDRUS MEMBRANIFOLIUS. *Fucus esculentus*, *F. teres*, *F. fimbriatus*, *Daberlochs*. On submarine rocks.

Eaten in Scotland.

CONFERVA. (De Cand. Bot. Gal. 989. Smith, Eng. Fl. vol. v. part i. page 351.)

CONFERVA RIVULARIS. *Crow silk*, *Hairy river weed*, *River conferva*. In streams and rivers.

This green fibrous plant, found in stagnant water, smells marshy, is used as a vermifuge by some country people; it is as difficult to burn as *Fontinalis antipyretica*, adheres firmly to glass or paper, and was used by the ancients to bind up broken limbs, keeping it constantly moist. (G.)

FUCUS. (De Cand. Bot. Gal. 937. Smith, Eng. Fl. vol. v. part 1, p. 266.)

*FUCUS NODOSUS. (E. B. 570.) *Knotted fucus*.

*FUCUS SERRATUS. (E. B. 1221.) *Serrated fucus*.

Used for the same purpose as *Bladder wrack*.

*FUCUS VESICULOSUS. (E. B 1066.) *Quercus marinus*, *Bladdered fucus*, *Bladder wrack*, *Sea wrack*. Rocky shores.

Burned to a charcoal, is the *Vegetable æthiops* of the shops; its ashes yield a considerable quantity of alkali; other species of fucus furnish this salt, but generally in a less quantity, therefore this is more generally burned for that purpose; this substance, when burned, is supposed to possess some deobstruent powers, and as such has been given in bronchocele, and scrofulous affections; its efficacy depends upon the quantity of iodine it contains. The principal use to which this plant has been applied, however, is in the manufacture of *Kelp*. (G.) This has been employed as a local and constitutional agent; Dr. Russell recommended scrofulous swellings to be rubbed with the bruised vesicles, and afterwards to be washed with sea water, in order to produce the resolution and disappearance of the swelling; the effect produced appears to be owing to the iodine contained in the Fucus. (L.) These three are also extensively employed as manure.

GIGARTINA. (De Cand. Bot. Gal. 952. Smith, Eng. Fl. vol. v. part 1, p. 298.)

GIGARTINA HELMINTHOCHORTON. *Fucus helminthochorton, Sphærococcus, Helminthochorton, Mousse de corse, Corsican moss, Corsican worm moss.* Mediterranean sea.

This usually contains also several kinds of geniculated thread-like algæ; vermifuge, taken in the form of a thick jelly or thick mucilage; imported from France. (G.) Said to produce nausea and giddiness; it is used as an anthelmintic, and has been supposed to be particularly efficacious against the large round worm (*Ascaris lumbricoides*;) it has also been recommended in cases of cancer, in consequence of Napoleon, during his imprisonment in St. Helena, having spoken of its efficacy in that disease. (L.)

GRACILLARIA. (Lindl. Med. Bot. 630.) *Gigartina.* (Smith.)

*GRACILLARIA COMPRESSA. *Sphærococcus compressus.* Sea-shore at Sidmouth.

Makes an excellent pickle and preserve when fresh. (L.)

GRACILLARIA LICHENOIDES. *Fucus lichenoides, Sphærococcus lichenoides.*

Highly valued for food in Ceylon and other islands of the east. (L.)

GRACILLARIA TENAX. *Fucus tenax, Sphærococcus tenax.*

Used very extensively by the Chinese for the same purposes as glue or gum arabic. (L.)

IRIDÆA. (De Cand. Bot. Gal. 944. Smith, Eng. Fl. vol. v. part 1, p. 307.)

*IRIDÆA EDULIS. *Fucus edulis, Red dulse.* Rocky shores.

Eaten while raw, also after being pinched with hot irons, in which case it tastes like roasted oysters; a red lake is prepared from it. (G.)

LAMINARIA. (De Cand. Bot. Gal. 939. Smith, Eng. Fl. vol. v. part 1, p. 271.)

*LAMINARIA DIGITATA. (E. B. 2274.) *Fucus digitatus, Sea girdle, Tangle.* Sea-shores, in deep water.

Contains a nutritive jelly, more or less saccharine, eaten both by man and beast; also burned for kelp. (G.)

*LAMINARIA SACCHARINA. (E. B. 1376.) *Fucus saccharinus, Sweet fucus, Sugary laminaria.* Sea-shores.

Washed in warm water and hung up, a saccharine substance exudes from it; some eat it without washing. (G.)

LAURENCIA. (De Cand. Bot. Gal. 951. Smith, Eng. Fl. vol. v. part 1, p. 295.)

*LAURENCIA PINNATIFIDA. (E. B. 1202.) *Fucus pinnatifida, Pepper dulse.* Rocks in the sea.

Taste biting, aromatic; eaten as a salad.

NOSTOC. (De Cand. Bot. Gal. 960. Smith, Eng. Fl. vol. v. part 1, p. 398.)

*NOSTOC COMMUNE. (E. B. 461.) *Tremella nostoc, Nostoc, Star shoot.* Gravelly soils, rocks, pastures, &c.

A greenish jelly, eatable; infused in brandy, it causes a disgust to that liquor in those who drink of it. (G.)

PORPHYRA. (De Cand. Bot. Gal. 958. Smith, Eng. Fl. vol. v. part 1, p. 310.)

*PORPHYRA LACINIATA. (E. B. 2296.) *Ulva umbilicalis, Laciniated purple laver, Shield laver.* On rocks and stones in the sea.

Esculent, but requires baking for some hours to render it eatable. (G.) This, under the name of *Laver*, is much eaten in many places, especially the south of England, pickled with salt and preserved in jars, and when brought to table, served up with lemon juice; the inhabitants of the western islands gather it in the month of March, and after pounding and macerating it with a little water, eat it with pepper, vinegar, and butter; others stew it with leeks and onions. (Hooker.)

RHODOMENIA. (Smith, Eng. Fl. vol. v. part 1, p. 288.)

*RHODOMENIA PALMATA. (E. B. 1306.) *Fucus palmatus, Dills, Dulesh, Dulse.* Rocky shores.

Eaten either raw, boiled, or dried, but is very tough. (G.)

SARGASSUM. (De Cand. Bot. Gal. 936. Smith, Eng. Fl. vol. v. part 1, p. 264.)

*SARGASSUM VULGARE. (E. B. 2114.) *Fucus natans, Lenticula marina, Vitis marina, Sea lentils.*

Used by the Portuguese and Dutch in dysuria. (G.)

*SARGASSUM BACCIFERUM. (E. B. 1967.) *Fucus bacciferum, F. natans, Laver, Gulf weed.*

Eaten raw as a salad; also pickled as samphire; aperient, diuretic, and antiscorbutic. (G.)

ULVA. (De Cand. Bot. Gal. 957. Smith, Eng. Fl. vol. v. part 1, p. 311.)

*ULVA LATISSIMA. (E. B. 1551.) *Iceland sea-grass.*
*ULVA LACTUCA. *Lichen marinus*, *Oyster green.*

Are also eaten. (G.)

THE

COLLECTION AND PRESERVATION OF PLANTS.

In collecting plants for medicinal purposes, it is important that they should be gathered at that period of their growth when the part of the plant intended for use contains the greatest amount of medicinal activity.

1. *Roots*, of herbaceous plants, should be collected either in the spring, before vegetation has commenced, or in the autumn, after the herb has withered. The latter period is probably the best for collecting the roots of most, if not all, herbaceous plants, as a large store of secretions is laid up in the roots at this time, for the support of the vital functions through the winter. Some roots, such as liquorice and dandelion, which are generally used in the recent state, may be preserved in this condition by keeping them covered with sand in a cellar. Roots that are intended to be dried, should be cleansed from adhering mould, by brushing them in a small quantity of water. The use of much water should be avoided. It is desirable that they should be dried without being previously sliced or cut, or having the cortex removed, whenever this is possible. In the cases of liquorice and marsh mallow roots, and some others, the cortex is, however, sometimes removed before drying. Large and succulent roots require to be cut, in order to facilitate their drying. They should be dried at a temperature not exceeding 120° Fahr.

2. Roots may be preserved as specimens by keeping them immersed in *spirit*, in *acetic acid*, or in *solution of common salt.* Acetic acid, about the strength of distilled vinegar, or rather stronger, answers the purpose very well, and being cheaper than spirit, would be preferred to it.

3. *Barks* ought to be collected at that season in which they can be most easily separated from the wood. (Lond. Pharm, 1836.) The epidermis, or outer skin of the bark, being generally inefficacious, should be scraped off. The ordinary heat of the atmosphere is in general sufficient for drying barks.

4. *Herbs* ought to be collected when they begin to flower; they should be gathered on a dry day, as soon as the dew is off. Any withered or decayed leaves should be removed. If intended for use in the fresh state, they should be used on the

day on which they are gathered. If intended to be dried, they should be spread out on hurdles or wicker-work, and exposed in a current of dry air, or covered with paper and exposed to the sun, until perfectly dry. The more quickly the drying is effected by these means, the better. They should then be put into wide-mouth bottles, and kept excluded from the access of light and moisture.

5. *Leaves*, are to be gathered after the flowers are blown, and before the seeds ripen. (Lond. Pharm. 1836.) Care should be taken that the leaves of biennial narcotic plants, such as Hyoscyamus and Digitalis, are not collected in the first year of their growth, as they possess less medicinal activity at this period, than at the period of inflorescence. They should be dried in the same manner as herbs (4).

6. *Flowers*, are to be gathered when recently blown. (Lond. Pharm. 1836.) They should be dried in the same way as herbs and leaves. In most cases it is desirable to remove the calyces. This should especially be done with roses intended for making rose-water. Red roses, before being dried, are generally cut transversely. The colour of some flowers, especially blue flowers, very soon fades. This effect is said to be in some degree prevented, by dipping the flowers, for a moment, in boiling water, and then slightly pressing them before drying them. Some flowers, such as roses and elder flowers, are preserved by merely packing them in a cask with common salt, or salt and water; this method is advantageously adopted with roses and elder flowers intended for making the distilled waters.

7. *Herbs* and *leaves*, are sometimes preserved, together with their *proper juices*, in the following manner:—the herbs or leaves are put into wide-mouth, bottles, to which corks are carefully fitted, and these are covered with a luting of lime and soft cheese spread on calico, and secured with string or wire. Canvas cloths are then tied round the bottles separately, and thus secured, the bottles are put into a boiler of water, which is gradually heated until it boils, and the boiling is continued for about a quarter of an hour; the water is then allowed to cool, when the bottles are removed, examined to ascertain whether they are sound, and in this state put into a cool place on their sides.

8. *Herbs*, *leaves*, and *flowers*, are preserved as botanical specimens, *in the moist state*, by keeping them immersed in *spirit*, in *acetic acid*, or in some saline solutions, such as *solution of common salt*, or of *alum*. The two first answer the purpose best. It is sometimes found beneficial to dip the plant for a moment into boiling water, before putting it into the liquid in which it is to be kept; the effect of which is probably

to coagulate the albumen contained in the plant. The colour of most plants is preserved better in acetic acid than in spirit.

9. *Dry botanical specimens,* are prepared by placing the plants between sheets of bibulous paper, and subjecting them to pressure, either by means of a screw-press, or with boards and straps or weights. The principal thing to be attended to in drying plants in this way, is to interpose plenty of bibulous paper between the specimens, and to change the paper every day. Some plants require to be dipped in hot water before drying them, and this is said to promote the preservation of the colours. When the specimens are sufficiently dry, they are to be fixed with gum-water, on sheets of paper, arranged in cases with a weight on the top, and a few pieces of camphor interspersed to prevent the attacks of insects.

10. *Fruits,* unless their efficacy depends upon the acerbity of their juices, ought to be gathered when they are ripe. They should be kept on a layer of straw, in a cool, dry, shady place. The fruits ought not to touch each other lest they should rot from want of free evaporation at the points of contact.

11. *Seeds,* are to be collected when ripe, and are to be kept in their own seed-vessels. (Lond. Pharm. 1836.)

12. Fruits and seeds may be preserved by heating them in their own juices, in the same manner as has been described for the preservation of herbs and leaves (7). Gooseberries and pease are preserved in this way; or sometimes the process is a little modified,—the bottles, after being left for about half-an-hour in the boiling water, are filled up to the brim with boiling water, and then corked without leaving any air in the bottle. The corks must be well secured with wax or some other cement.

13. Fruits and seeds are also preserved by keeping them in *spirit,* in *acetic acid,* or in *salt and water.* In preserving fruits as specimens, it is sometimes found desirable to dip them into a hot solution of alum in water, before putting them into the spirit or acetic acid in which they are to be kept. This tends to preserve the colour and firmness of the fruit. Some very succulent fruits, as well as vegetables, require to have a portion of their aqueous juices abstracted before putting them into the liquids in which they are to be preserved. For this purpose they are sometimes immersed for a day or two in a concentrated solution of common salt. They are afterwards dipped, for a moment, into a hot solution of alum, or hot acetic acid, and then put into the cold acetic acid or spirit, in which they are to be kept.

14. *Syrup* is sometimes used for preserving fruits. The syrup should be boiled to a weak candy height, and poured

hot upon the fruit so as to cover it, the juice of the fruit being drawn out by the syrup, the latter becomes weakened, and must therefore be poured off after about twelve hours, reboiled to its former strength, and poured on the fruit again. This must be repeated, if the fruit is very juicy, a third or fourth time, or until the syrup is no longer weakened by the juice of the fruit. The peel of some fruits is preserved in this way.

15. Seeds are preserved, so as to retain their germinating power, when sent to distant countries, by covering them with honey or thick syrup. They are also sometimes preserved for this purpose by dipping them into melted wax, and allowing a coating of wax to remain over them; the wax or the sugar is to be cleaned off previous to planting them.

16. Some vegetable substances, such as *truffles*, are preserved in *olive oil*, the jars in which they are contained being closely luted, to prevent the oil from becoming rancid.

ANIMAL, VEGETABLE, AND MINERAL PRODUCTS,

AND

FORMULÆ

FOR THE PREPARATION OF COMPOUNDS

EMPLOYED IN

MEDICINE, DOMESTIC ECONOMY, AND THE ARTS.

Acetum. *Vinegar.* Impure acetic acid, obtained by submitting spirituous liquors to the acetic fermentation. It is usually made from an infusion of raw or malted barley, when it is called *Malt vinegar*, or *British vinegar;* or from wine, when it is called *Wine vinegar*, or *French vinegar.*

Malt, or British vinegar. This is sold of four different degrees of strength, called respectively Nos. 18, 20, 22, and 24. The last, which is the strongest, is also called *Proof vinegar ;* it ought to contain about five per cent. of real acetic acid. Vinegar makers are allowed by law to add one thousandth part by weight of oil of vitriol to these vinegars.

[Lond. Ph. 1826. **Acetum.** *Vinegar prepared by fermentation.* A yellowish liquor, of a peculiar odour, a fluid-ounce of which is saturated by a drachm of crystallized carbonate of soda. Solution of chloride of barium being added, the sulphate of barytes precipitated does not exceed 1·14 grain. Hydrosulphuric acid being added, its colour is not altered.]

[Edin. Ph. 1841. **Acetum Britannicum.** *British vinegar.* Density 1006 to 1019. Sulphuretted hydrogen does not colour it. In four fluid ounces complete precipitation takes place with 30 minims of solution of nitrate of baryta. (Nitr. Baryt. 40 parts, water 800 parts.)]

[**Wine, or French vinegar.** This is prepared usually from *white* wine, sometimes from red, but the former is preferred.]

[Edin. Ph. 1841. **Acetum gallicum.** *French vinegar.* Density 1014 to 1022. Ammonia in slight excess causes a purplish muddiness, and slowly a purplish precipitate. In four fluid ounces complete precipitation takes place with 30 minims of solution of nitrate of baryta. (Nitr. Baryt. 40 parts, water 800 parts.)]

[Dubl. Ph. 1826. ACETUM VINI. *Wine vinegar.*]

ACETUM AROMATICUM. *Aromatic vinegar.* This is strong acetic acid, with camphor, and essential oils of cloves, lavender, rosemary &c., dissolved in it. The acid should be nearly as strong as the glacial acetic acid. The following formula was given for it, in the Edin. Ph. 1839, under the name of—

Acidum aceticum aromaticum.

℞	Rosemary, dried	
	Origanum, dried āā	℥j
	Lavender, dried	℥ss
	Cloves, bruised	ʒss
	Acetic acid (sp. gr. 1·068)	Ojss

Macerate for seven days, strain and express strongly, and filter the liquor.

This has been omitted in the Edin. Ph. 1841. The *Acidum aceticum camphoratum*, of the Edinburgh College, is probably intended as a substitute. The following is a good formula for—

Aromatic vinegar.

℞	Strongest acetic acid	Oj
	Camphor	℥ij
	Oil of lavender	ʒj
	Oil of cinnamon	gtt. xx
	Oil of cloves	gtt. xxx
	Oil of rosemary	gtt. xxx

Mix.

ACETUM CANTHARIDIS. *Vinegar of cantharides.*

Lond. Ph. 1836.

℞	Cantharides rubbed to powder	℥ij
	Acetic acid	f℥xx

Macerate the cantharides with the acid for eight days, frequently shaking. Lastly, press and strain.

Edin. Ph. 1841.

℞	Cantharides, in powder	℥iij
	Acetic acid	f℥v
	Pyroligneous acid	f℥xv
	Euphorbium, in coarse powder	ʒss

Mix the acids, add the powders, macerate for seven days, strain and express strongly, and filter the liquors.

These preparations are intended to be used for producing speedy vesication. A pledget wetted with the *Acetum cantharidis*, applied to the skin, and covered with a piece of adhesive plaster, will often produce a blister in from half-an-hour to an hour. This effect, however, cannot be depended upon, especially with the preparation of the London College. Several medical men in London are in the habit of ordering *Acetum cantharidis*, made according to the London Pharmacopœia, but substituting, for the acetic acid there ordered, a much stronger acid—that used for making *Aromatic vinegar*—which is nearly three times the strength of the acetic acid of the London College. When thus prepared, it will generally raise a blister in five or ten minutes.

ACETUM COLCHICI. *Vinegar of colchicum.*

Lond. Ph. 1836, Edin. Ph. 1841, and Dubl. Ph. 1826.

℞	Meadow saffron cormus, fresh, sliced	℥j
	Distilled vinegar - -	f℥xvj
	Proof spirit - - -	f℥j

Macerate the meadow saffron cormus with the vinegar, in a covered glass vessel, for three days; afterwards press and strain the liquor and set it by, that the dregs may subside; lastly, add the spirit to the clear liquor.

ACETUM DESTILLATUM. *Distilled vinegar.*

Lond. Ph. 1836.

Take of Vinegar a gallon;

Let the vinegar distil, in a sand-bath, from a glass retort into a glass receiver. Keep the seven pints first distilled for use.

Note.—No precipitate is formed on the addition of acetate of lead, nitrate of silver, nor iodide of potassium. Neither hydrosulphuric acid nor ammonia alters its colour. After the digestion of a plate of silver in it, hydrochloric acid occasions no precipitation. 13 grs. of the crystals of carbonate of soda are saturated by 100 grs. of distilled vinegar.

Edin. Ph. 1841.

Take of Vinegar (French by preference) eight parts; distil over with a gentle heat seven parts; dilute the product, if necessary, with distilled water, till the density is 1005.

Note.—Density 1005; colourless; unaltered by sulphuretted hydrogen; one hundred minims neutralize 8 grains of carbonate of soda.

Dubl. Ph. 1826.

Take of Wine-vinegar *by measure,* ten parts.

Distil with a slow fire, *by measure,* eight parts. In the distillation, glass vessels should be employed, and the first portion which comes over, in quantity amounting to one part, rejected.

The sp. gr. of this acid is to that of distilled water as 1005 to 1000.

ACETUM OPII. *Vinegar of opium.*

Edin. Ph. 1841.

Take of Opium, ℥iv; Distilled vinegar, f℥xvj.

Cut the opium into small fragments, triturate it into a pulp with a little of the vinegar, add the rest of the vinegar, macerate in a closed vessel for seven days, and agitate occasionally. Then strain and express strongly, and filter the liquor.

[Dubl. Ph. 1826, the same as Edin. Ph. 1841.]

U. S. Ph. 1840.

℞	Opium, in coarse powder - -	℥viij
	Nutmegs, in coarse powder - -	℥iss
	Saffron - - - -	℥ss
	Sugar - -	℥xij.

Distilled vinegar, a sufficient quantity.

Digest the opium, nutmeg, and saffron with a pint and a half of distilled vinegar, on a sand-bath, with a gentle heat, for forty-eight hours, and strain. Digest the residue with an equal quantity of distilled vinegar, in the same manner, for twenty-four hours; then put the whole into an apparatus for displacement, and return the filtered liquor as it passes until it comes away quite clear. When the filtration shall have ceased pour distilled vinegar gradually on the materials remaining in the instrument, until the whole quantity of filtered liquid equals three pints. Lastly, add the sugar, and, by means of a water-bath, evaporate to three pints and four fluid ounces.

Acetum prophylacticum. *Prophylactic vinegar. Vinaigre des quatre voleurs. Acetum quatuor furum. Four thieves' vinegar. Marseilles vinegar.*

It is said that during the plague at Marseilles, four persons, by the use of this preservative, attended, unhurt, multitudes of those that were affected; that under colour of these services they robbed both the sick and the dead, and that being afterwards apprehended, one of them saved himself from the gallows by disclosing the composition of the prophylactic, which was as follows:—

℞ Fresh tops of common wormwood, Roman wormwood, Rosemary, Sage, Mint, Rue, each -	℥jss
Dried Lavender flowers - - -	℥ij
Garlic, Calamus aromaticus, Cinnamon, Cloves, Nutmegs, each - - - -	ʒij
Strong vinegar - - - -	8 pints

Digest in the heat of the sun or a sand-bath, in a mattrass closely stopped, for twelve days; strain, press, and filter; and afterwards add one ounce of camphor dissolved in spirit of wine.—*Lewis's Dispensatory.*

This formula has since been much simplified, and was introduced as follows into the Edinburgh Pharmacopœia of 1817, under the title of

Acidum aceticum aromaticum.

℞ Dried Rosemary and Sage, each - -	℥j
Dried Lavender flowers - - -	℥ss
Bruised Cloves - - - -	ʒss
Distilled vinegar - - - -	℔ij.

Macerate for seven days, press, and filter.

Acetum scillæ. *Vinegar of squill.*

Lond. Ph. 1836.

℞ Squill, recently dried, ℥xv
Distilled vinegar, Ovj
Proof spirit, Oss.

Macerate the squill with the vinegar with a gentle heat, in a closed glass vessel, for twenty-four hours; afterwards press out

Edin. Ph. 1841.

℞ Dried squill, in small fragments ℥v
Distilled vinegar, Oij
Proof spirit, f℥iij.

Macerate the squill in the vinegar for seven days in a covered glass vessel, strain the liquor and set it by, that the dregs may subside; lastly, add the spirit to the clear liquor.

and express the liquor, add the spirit, and filter the whole.

Dubl. Ph. 1826.

℞ Bulb of the squill, sliced, and recently dried	℔ss
Distilled vinegar	Oiij
Rectified spirit	f℥iv.

Macerate the squill in the vinegar for seven days, in a glass vessel, frequently shaking it; then draw off the vinegar, to which, poured from the fœces after they have subsided, add the spirit.

ACIDUM ACETICUM. *Acetic acid.*

Is considered to be peculiar to the organic kingdom. It exists free, or combined with potash, lime, or ammonia, in the juices of many vegetables. It is obtained as a product of the acetous fermentation, and of the destructive distillation of wood; and by one or other of these means the acetic acid of commerce is always produced. The chemical composition of acetic acid is $C^4 H^3 O^3$; but this, which is distinguished as anhydrous or real acetic acid, has never been isolated; it exists only in combination. The liquid to which the name *Acetic acid* is usually applied, is a combination of real acetic acid with water. The proportions of water contained in the acid ordered under the name of acetic acid in the three British Pharmacopœias differ considerably.

Acidum aceticum.

Lond. Ph. 1836.

℞ Acetate of soda, ℔ij
Sulphuric acid, ℥ix
Distilled water, f℥ix.

Add the sulphuric acid, first mixed with the water, to the acetate of soda put into a glass retort, then let the acid distil in a sand-bath. Care is to be taken that the heat, towards the end, be not too much increased.

Note.—The specific gravity of this acid is 1·048. 87 grains of crystals of carbonate of soda are saturated by 100 grains of this acid. The acid, when saturated with carbonate of soda and evaporated, yields crystals of acetate of soda. Other tests agree with those of *Acetum destillatum.*

Edin. Ph. 1841.

Take of acetate of lead any convenient quantity; heat it gradually in a porcelain basin by means of a bath of oil or fusible metal, (8 tin, 4 lead, 3 bismuth,) to 230° F.; and stir till the fused mass concretes again; pulverize this when cold, and heat the powder again to 320°, with frequent stirring, till the particles cease to accrete. Add 6 ounces of the powder to 9 fluid drachms and a half of pure sulphuric acid contained in a glass mattrass; attach a proper tube and refrigeratory; and distil from a fusible-metal bath with a heat of 320° to complete dryness. Agitate the distilled liquid with a few grains of red oxide of lead to remove a little sulphurous acid, allow the vessel to rest a few minutes, pour off the clear liquor, and redistil it. The density is commonly from 1063 to 1065, but must not exceed 1068·5.

Dubl. Ph. 1826.

Take of Acetate of potash, 100 parts; Sulphuric acid, 52 parts. Put the acid into a tubulated retort, then gradually, and at different intervals of time, add the acetate of potash, waiting after each addition until the mixture becomes cool. Lastly, with a moderate heat, distil the acid until the residuum is dry. The specific gravity of this acid is to that of distilled water as 1074 to 1000.

The acetic acid of the Lond. Ph. 1836 contains 30·8 per cent. of real acetic acid, while that of the Edin. Ph. 1841, contains about 80·5 per cent., and that of the Dubl. Ph. 1836, about 65·6 per cent. of real acetic acid. The acid of the Edinburgh Pharmacopœia crystallizes at a temperature about 50° F. This kind of acid is sometimes called *Glacial acetic acid*, or *Radical vinegar.* It is sometimes obtained by distilling dry crystallized verdigris, in a glass retort with the heat of a sand-bath; the product of this process, which in some old works is called *Spiritus Veneris*, usually contains a small quantity of pyroacetic spirit. A more pure product may be procured, by a similar process, from acetate of mercury.

Acidum arseniosum. *Arsenious acid. White arsenic.* Obtained by roasting certain arsenical ores in furnaces adapted for the purpose, and purifying the product by sublimation. It consists of 1 eq. or 38 parts *arsenicum*, and 1½ eq. or 12 parts *oxygen.* Or, adopting 75·34 as the equivalent of arsenicum, according to Graham, the composition of arsenious acid will be, 1 eq. or 75.34 parts *arsenicum*, and 3 eq. or 24 parts *oxygen.* It is met with in commerce in powder and in vitrious masses. The powder, to which the name white arsenic is usually applied, is very frequently adulterated with chalk, sulphate of barytes, or sulphate of lime. The vitrious arsenious acid, when first prepared, is in transparent, or nearly transparent, pieces, which on exposure to the air become opaque, sometimes slightly yellow, and having the appearance of layers or strata, differing in colour or opacity. This kind is generally free from adulteration.

Acidum arseniosum. Arsenious acid. Prepared by sublimation.

Lond. Ph. 1636.

It is entirely sublimed when heated. Mixed with charcoal and exposed to heat, it emits an alliaceous smell. It is dissolved by boiling water; and hydrosulphuric acid, when added, throws down a yellow precipitate, and lime-water yields a white one.

Edin. Ph. 1841. *Arsenicum album. Sesquioxide of arsenic; Arsenious acid.* Entirely sublimed by heat.

Dubl. Ph. 1826. *Sublimed white oxide of arsenic.*

Let the oxide of arsenic, reduced to a coarse powder, be exposed to heat in a suitable vessel, avoiding the vapours, that the *white oxide of arsenic* may be sublimed.

ACIDUM BENZOICUM. *Benzoic acid.*

Lond. Ph. 1836.

Take of benzoin, ℔j. Put the benzoin into a proper vessel placed in sand, and the heat being gradually raised, sublime until nothing more rises; press that which is sublimed, wrapped in bibulous paper, and separate it from the oily part; afterwards again sublime it. When cautiously heated it totally evaporates with a peculiar odour. It is sparingly soluble in water, but plentifully in rectified spirit. It is entirely dissolved by solution of potash or by lime-water, and is precipitated by hydrochloric acid.

Edin. Ph. 1841.

Take of benzoin any convenient quantity; put it into a glass mattrass; and by means of a gradually increasing heat, sublime as long as anything rises. Squeeze the sublimate between folds of filtering-paper, to remove the oil as much as possible, and sublime the residuum again.

Note.—Colourless; sublimed entirely by heat.

Dubl. Ph. 1826.

℞ Benzoin, 5 parts
Lime fresh burnt, Muriatic acid, of each 1 part
Water, 200 parts.

Triturate the benzoin with the lime, then boil the mixture in 100 parts of water; suffer the vessel to rest, and pour off the liquor when cold. Boil the remainder in 70 parts of water, and again pour off the cold liquor. Evaporate the mixed liquors to one-half, filter them through paper, and to the liquors, when cold, gradually add the muriatic acid. Lastly, having decanted off the supernatant fluid, dry with a gentle heat the residual powder, previously washed with a small quantity of cold water; pass it into a proper vessel, and with a slow fire sublime the benzoic acid.

ACIDUM BORACICUM. *Boracic acid. Sal sedativum Hombergi. Homberg's Sedative salt.*

1.

Dissolve ℥viij of borax in a sufficient quantity of warm water, and add thereto ℥iij of oil of vitriol. Evaporate the mixture till a pellicle appears on the surface, then remove the solution from the fire, and collect, wash, and dry the crystals which form as it cools.

2.

Put ℥viij of powdered borax into a wide-necked retort; pour thereon ℥iij of water; then add ℥iij of oil of vitriol. Place the retort over a furnace, adapt a receiver to it, and increase the fire until the vessel becomes red-hot. The sedative salt will rise into the neck of the retort, and is to be swept out with a feather; and a little liquor will pass into the receiver. When the vessels have become cold, pour back the distilled liquor into the retort, and sublime again, repeating the process as long as any of the salt rises. In this process the fire must be expeditiously raised when the matter begins to grow dry, for it is only at this period that the acid sublimes in any quantity.—*Lewis's Dispensatory.*

Boracic acid is now obtained in abundance in Tuscany, as a natural product, carried up from subterraneous cavities by the combined agencies of heat and aqueous vapour (as in the process last described), and retained and collected in reservoirs of water, called *lagoons*, on the surface of the earth. This water is afterwards evaporated until it deposits the acid on cooling. Borax is now made from this natural boracic acid.

Boracic acid was formerly considered a mild anodyne in doses of from 2 to 18 grains.

ACIDUM CITRICUM. *Citric acid.*

Exists in large quantity in the juices of many fruits, especially those of the genus *Citrus*. It constitutes nearly the whole of the free acid in the fruits of Dulcamara, Dog-rose, Cranberry, &c.; and is found mixed with malic acid in gooseberries, currants, strawberries, raspberries, and cherries.

For commercial purposes citric acid is usually obtained from the juice of lemons or of limes. The following are the processes of the Pharmacopœias:—

Lond. Ph. 1836.

Take of the juice of lemons, Oiv
Prepared chalk, ℥ivss
Diluted sulphuric acid, f℥xxvijss
Distilled water, Oij

Add the chalk gradually to the juice of lemons made hot, and mix. Set by, that the powder may subside; afterwards pour off the supernatant liquor. Wash the citrate of lime frequently with warm water. Then pour upon it the diluted sulphuric acid and the distilled water, and boil for a quarter of an hour. Press the liquor strongly through a linen cloth, and strain it. Evaporate the strained liquor with a gentle heat and set it by, that crystals may be formed.

Dissolve the crystals, that they may be pure, again and a third time in water, and as often strain, boil down, and set it aside.

Note.—This acid is soluble in water; what is precipitated from the solution by acetate of lead is dissolved by nitric acid. No salt of potash, except the tartrate, is precipitated by solution of citric acid. It is totally dissipated in the fire.

Edin. Ph. 1841.

Take of lemon-juice, Oiv
Prepared chalk, ℥ivss, or a sufficiency
Diluted sulphuric acid, f℥xxxvj, or in the same proportion to the chalk required.

Boil the lemon-juice, allow it to rest, pour off the clear liquor, boil this again, and add the chalk to it while hot by degrees till there is no more effervescence, and the liquor ceases to taste acid. Collect the precipitate, and wash it with hot water till the water passes from it colourless. Squeeze the residuum in a powerful press; mix it uniformly with 2 pints of distilled water; and then add the sulphuric acid by degrees and with constant stirring. Try whether a small portion of the liquid, when filtered, gives with solution of nitrate of baryta a precipitate almost entirely soluble in nitric acid; and if the precipitate is not nearly all soluble, add a little citrate of lime to the whole liquor till it stand this test. Separate now the clear liquor by subsidence or filtration, washing the insoluble matter with cold water, and adding the washings to the liquor: concentrate with a gentle heat till crystals form on the surface: set the liquor aside to cool and crystallize; and purify the crystals by repeated solution and crystallization till they are colourless.

Note.—A solution in 4 parts of water is not precipitated by carbonate of potash: when incinerated with the aid of red oxide of mercury, no ash is left, or a mere trace.

Dubl. Ph. 1826.

Take of lemon-juice as much as may be required; prepared chalk, what may be sufficient. To the lemon-juice, previously heated, gradually add the chalk, then pour off the liquor from the residual citrate of lime. Wash this repeatedly with warm water and dry it. To the dried powder add diluted sulphuric acid, in weight equal to three times the chalk employed. Boil the mixture, and using strong pressure, strain it through a linen cloth, and then filter through paper. Evaporate the liquor, that crystals may form by cooling. These, by repeated solution and crystallization, will become more pure.

Solutio acidi citrici. Artificial Lemon-juice.

This is made by dissolving ʒj citric acid in f℥xiv distilled water. If the flavour of lemon-juice be desired, a few drops of essential oil of lemons may be added.

Saturating power of Citric acid.

20 grains of citric acid, (or fʒv lemon-juice,)	will saturate	Bicarb. potash.	Carbonate potash.	Sesquicarb. ammonia.	Carbonate soda.	Sesquicarb. soda.
		29 grs.	24 grs.	17 grs.	41 grs.	24 grs.

20 grains of	Bicarb. potash.	Carbonate potash.	Sesquicarb. ammonia.	Carbonate soda.	Sesquicarb. soda.
Requires of citric acid for saturation,	14 grs. (or fʒiijss lemon-juice)	17 grs. (or fʒiv lemon-juice)	24 grs. (or fʒvj lemon-juice)	10 grs. (or fʒijss lemon-juice)	17 grs. (or fʒiv lemon-juice)

In the above table the substances named are supposed to be those described under the respective appellations in the Lond. Ph. 1836. In the calculations the fractional parts of the grain have been omitted.

Acidum gallicum. *Gallic acid.*

When pure, is a colourless, crystallizable acid, having an acidulous and styptic taste. It is soluble in 3 parts of boiling water, and in 100 parts of cold water.

Preparation.—1. Expose powdered nutgalls, moistened with water, to the action of the air for several weeks, at a temperature between 70° and 80° F., renewing the water, lost by evaporation, from time to time. The mass will swell up and become covered with mould. At the end of the above period press out the liquor, which will contain much colouring matter, and but little of the gallic acid. The latter, which remains on the marc, is to be extracted by boiling water, and will be deposited in crystals from the pressed and filtered liquor. These crystals must be purified by boiling with 8 parts of water and one-sixth of their weight of animal charcoal, and will now be obtained, on the cooling of the liquor, in a state of sufficient purity. *Dumas.*

2. Make a strong infusion of nutgalls in cold water; precipitate this with sulphuric acid; mix the thick mass obtained with diluted sulphuric acid, cold; press out the liquor, and add the marc to a mixture of sulphuric acid with 2 parts of water, at the boiling temperature; boil the mixture for some minutes and allow it to cool. Crystals of gallic acid will be deposited, which may be purified by recrystallizing from water, converting the new product into an insoluble gallate of lead, by means of acetate of lead; and decomposing the gallate of lead by sulphuretted hydrogen gas.—*Graham.*

Gallic acid has been given in doses of from 15 grains to 30 grains against the *Tænia solium*. It is sometimes used externally as a styptic.

ACIDUM HYDRIODICUM. *Hydriodic acid.*

Consists of iodine and hydrogen. (HI). Under ordinary circumstances it exists as a gas; but the solution of this in water is the form in which it is usually employed.

Solution of hydriodic acid.

Reduce ℥j of iodine to powder, by rubbing it, moistened with a little water, in a Wedgewood mortar; mix this with ℥vj of distilled water in any convenient vessel, and pass sulphuretted hydrogen gas into the mixture, until the colour of the iodine is entirely removed; boil the liquor so as to drive off excess of sulphuretted hydrogen, and remove the sulphur which will be present, by passing the fluid through a filter. The filtered liquor (solution of hydriodic acid) should be colourless and free from smell. It cannot be kept for any length of time without undergoing decomposition.

ACIDUM HYDROCHLORICUM. *Hydrochloric acid. Muriatic acid. Spirit of salt.* (HCl).

Under ordinary circumstances a gas; but the above names are generally given to the solution of hydrochloric acid gas in water.

Lond. Ph. 1836. *Acidum hydrochloricum.*

℞	Chloride of sodium, dried - -	℔ij
	Sulphuric acid - - - -	℥xx
	Distilled water - - - -	f℥xxiv

Add the acid, first mixed with f℥xij of the water, to the chloride of sodium put into a glass retort. Pour what remains of the water into a receiver; then, the retort being fitted to it, let the acid, distilled in a sand-bath, pass over into this water, the heat being gradually increased.

Note.—Colourless; entirely vaporized by heat. When mixed with distilled water, neither chloride of barium, nor ammonia, nor the sesquicarbonate of ammonia, throws down anything. Strips of gold, even when heated in it, are not acted upon by it. It does not destroy the colour of solution of sulphate of indigo. Its specific gravity is 1·16. 132 grains of crystals of carbonate of soda are saturated by 100 grains of this acid.

Edin. Ph. 1841.—*Acidum muriaticum.*

Hydrochloric acid of commerce. Density at least 1·180. It is always yellow, and commonly contains a little sulphuric acid, oxide of iron, and chlorine.

Edin. Ph. 1841. *Acidum muriaticum purum.*

Purify muriate of soda by dissolving it in boiling water, concentrating the solution, skimming off the crystals as they form on the surface, draining from them the adhering solution as much as possible, and subsequently washing them with cold water slightly. Take of this salt, previously well dried, of pure sulphuric acid, and of water, equal weights. Put the salt into a glass retort, and add the acid previously diluted with a third part of the water and allowed to cool. Fit on a receiver containing the rest of the water. Distil with a gentle heat by means of a sand-bath or naked gas-flame so long as any liquid passes over, preserving the receiver constantly cool by snow or a stream of cold water.

Note.—Density 1·170; nearly or entirely colourless; without action on gold-leaf. If previously diluted with distilled water, it is not altered by solution of nitrate of baryta.

Dubl. Ph. 1826. *Acidum muriaticum.*

℞ Muriate of soda, 100 parts;
Sulphuric acid of commerce, 87 parts;
Water, 124 parts.

Mix the acid with one-half of the water, and when the mixture has cooled, pour it on the muriate of soda previously introduced into a glass retort; pass the remainder of the water into a receiver so connected with the retort as to absorb the elastic fluid which comes over. Distil the liquor until the residuum in the retort is made dry.

ACIDUM HYDROCHLORICUM DILUTUM. *Diluted Hydrochloric acid.*

Lond. Ph. 1836. *Acidum hydrochloricum dilutum.*

℞ Hydrochloric acid, f℥iv
Distilled water, f℥xij. Mix.

Edin. Ph. 1841. *Acidum muriaticum dilutum.*

℞ Muriatic acid, f℥iv
Distilled water, f℥xij.

Mix them together. The density of this preparation is 1·050.

Dubl. Ph. 1826. *Acidum muriaticum dilutum.*

Take of muriatic acid, by measure, 10 parts
Distilled water, by measure, 11 parts. Mix.

The sp. gr. of this acid is to that of distilled water as 1080 to 1000.

Acidum hydrocyanicum. *Hydrocyanic acid. Prussic acid. Acidum borussicum.*

This acid was first obtained in a free state in the year 1782, by Scheele, who prepared it from Prussian blue. It exists ready formed in, or may be obtained as a product from, many vegetables, especially those belonging to the sub-orders *Amygdaleæ* and *Pomeæ*. Its proximate constituents are cyanogen and hydrogen, but its ultimate composition is $C^{2}NH$. Pure anhydrous hydrocyanic acid is a solid at the temperature of 0° F.; it becomes liquid at a temperature a little above this; and boils at 79° or 80° F., forming hydrocyanic acid vapour. The solution of this in water forms the diluted hydrocyanic acid which is employed in medicine.

Acidum hydrocyanicum dilutum. *Diluted Hydrocyanic acid.*

Lond. Ph. 1836. *Acidum hydrocyanicum dilutum.*

℞	Ferro-cyanide of potassium - - -	℥ij
	Sulphuric acid - - - -	℥iss
	Distilled water - - - -	Oiss

Mix the acid with 4 fluidounces of the water, and to these, when cooled and put into a glass retort, add the ferro-cyanide of potassium, first dissolved in half a pint of the water. Pour 8 fluidounces of the water into a cooled receiver: then, the retort being fitted on, let 6 fluidounces of acid pass into this water, distilled with a gentle heat in a sand-bath. Lastly, add 6 more fluidounces of distilled water, or as much as may be sufficient, that 12·7 grains of nitrate of silver dissolved in distilled water may be accurately saturated by 100 grains of this acid.

Diluted hydrocyanic acid may be otherwise prepared, when it is to be more quickly used, from 48½ grains of cyanide of silver, added to a fluidounce of distilled water, mixed with 39½ grains of hydrochloric acid. Shake all these in a well-stopped vial; and after a short interval pour off the clear liquor into another vessel. Keep this for use, the access of light being prevented.

Note.—This acid is free from colour; evaporates by heat, exhaling its peculiar odour. It turns litmus of a slight fugacious red colour; hydrosulphuric acid, when added, does not discolour it. 100 grains of this acid, when solution of nitrate of silver is added, precipitate 10 grains of cyanide of silver, which are readily dissolved by boiling nitric acid. If the iodo-cyanide of potassium and mercury, when mixed with the hydrocyanic acid, be reddened, it contains some other acid. In 100 grains of this diluted acid there are contained 2 grains of real hydrocyanic acid; and to this standard, in whatever mode it is distilled, we direct it should be reduced.

Edin. Ph. 1841. *Acidum hydrocyanicum. Hydrocyanic acid.*

℞	Ferro-cyanide of potassium	℥iij
	Sulphuric acid	f℥ij
	Water	f℥xvj,

Dissolve the salt in 11 fluidounces of the water, and put the solution into a mattrass with a little sand; add the acid previously diluted with 5 fluidounces of the water and allowed to cool; connect the mattrass with a proper refrigeratory; distil with a gentle heat, by means of a sand-bath or naked gas-flame, till 14 fluidounces pass over, or till the residuum begins to froth up. Dilute the product with distilled water till it measures 16 fluidounces.

Note.—Solution of nitrate of baryta occasions no precipitate. 50 minims diluted with 1 fluidounce of distilled water, agitated with 390 minims of solution of nitrate of silver and allowed to settle, will again give a precipitate with 40 minims more of the test: but a further addition of the test after agitation and rest has no effect. The precipitate entirely disappears in boiling nitric acid.

Dubl. Ph. 1826. *Acidum Prussicum. Prussic acid.*

℞	Cyanuret of mercury	℥j
	Muriatic acid	fʒvij
	Water	f℥viij

Distil into a refrigerated receiver 8 fluidounces, to be kept in a well-corked bottle, in a cool and dark place. The specific gravity of this acid is to that of distilled water as 998 to 1000.

Scheele's Prussic acid.

Mix together 10 parts of Prussian blue in powder, 5 parts of red oxide of mercury, and 30 parts of water; boil the mixture in a glass vessel for some minutes, or until the blue colour has disappeared; pass the fluid through a filter, and afterwards wash the filter with 10 parts more of hot water. To the clear liquors add 2½ parts of clean iron-filings, quite free from rust, and 1 part of strong oil of vitriol; shake the mixture, and pour the clear solution from the mercury which separates at the bottom. Put the solution into a retort and distil over one-fourth part of it, which keep for use.—*Thompson's System of Chemistry.*

The foregoing processes for preparing *diluted hydrocyanic acid* afford products differing materially from each other in strength. Scheele's hydrocyanic acid was for some time generally employed in this country, but the process for its preparation is objectionable, as the acid obtained by it is of uncertain strength, depending on the quality of the Prussian blue. Mr. Everett found specimens of Scheele's hydrocyanic acid, obtained from different houses in London, to contain, in one case, 5·8 per cent. of real acid; in others, 2·1 to 2·6 per cent; and in several instances only 1·4 per cent. The strength of this acid has been generally estimated at 5 per cent. of real acid. The *diluted hydrocyanic acid*, Lond. Ph. 1836, contains 2 per cent.

of real acid; the *hydrocyanic acid*, Edin. Ph. 1841, contains 3·226 per cent.; the *Prussic acid*, Dubl. Ph. 1826, contains 1·6 per cent. of real acid.

ACIDUM IODICUM. *Iodic acid.*

A white solid, having a strong, astringent, sour taste, but no smell. Its specific gravity is greater than that of oil of vitriol. It is decomposed by a heat above 500° F.—*Preparation.* Introduce nitric acid, specific gravity 1·5, into a tube about fifteen inches long, sealed at one end; add a fifth part of iodine, and keep the mixture at a boiling temperature for several hours, renewing the nitric acid, as it is lost by evaporation, and returning the iodine, which rises and condenses on the sides of the tube, to the liquid, by agitation or by means of a glass rod. When the iodine has entirely disappeared, the nitric acid is to be driven off by evaporation at a temperature below 500° F., and the iodic acid will remain in the tube. (*Mr. Connell of Edinburgh.*) This process answers very well for the preparation of a few grains of iodic acid, but when a larger quantity is required it is more conveniently and economically made, by boiling iodate of barytes with one-fourth of its weight of oil of vitriol and 1½ times its weight of water, when sulphate of barytes is formed, which may be separated by the filter, and the liquor, on being carefully evaporated to dryness, yields iodic acid.

The following process has been given by Mr. Lewis Thompson:—Put 1 atom or 126 grains of iodine into a proper vessel, with 24 ounces of water, and pass chlorine, previously washed in cold water, through the mixture until it shall have become colourless; set the solution aside for an hour, then heat it to 212° F. to disengage the uncombined chlorine, and add 2½ atoms or 295 grains of recently precipitated oxide of silver; boil the whole for ten minutes; filter and evaporate carefully to dryness. The product is pure anhydrous iodic acid.

Morphia is said to be the only vegetable alkali which decomposes iodic acid and liberates iodine, on which account iodic acid has been recommended as a test for morphia.

ACIDUM LACTICUM. *Lactic acid.* ($C^6 H^5 O^5 + Aq.$)

This acid exists in several of the animal secretions, especially in the urine. It is a product of the spontaneous fermentation of whey, of the viscous fermentation of rice-water, and of the juice of the beet-root. Hydrated lactic acid is a colourless, syrupy liquid, the specific gravity of which is 1·215. It has a very strong acid taste, which is remarkably weakened by dilution with water.

ACIDUM NITRICUM. *Nitric acid.* (Symb. NO^5.)

Nitric acid has never been obtained in an isolated form. It exists only in combination. Combined with water it forms the nitric acid of commerce and of the Pharmacopœias.

Lond. Ph. 1836.

Take of nitrate of potash, dried, sulphuric acid, each 2 pounds. Mix in a glass retort, then let the acid distil in a sand-bath.

Note.—Nitric acid is wholly evaporated by heat. When mixed with distilled water, neither nitrate of silver nor chloride of barium throws down anything. Its specific gravity is 1·50. About 217 grains of the crystals of carbonate of soda are saturated by 100 grains of this acid.

Edin. Ph. 1841.

Purify nitrate of potash (if necessary) by two or more crystallizations till nitrate of silver does not act on its solution in distilled water. Put into a glass retort equal weights of this purified nitrate and of sulphuric acid; and distil into a cool receiver with a moderate heat from a sand-bath or naked gas-flame so long as the fused material continues to give off vapour. The pale yellow acid thus obtained may be rendered colourless (should this be thought necessary) by heating it gently in a retort.

Note.—Density 1·500; colourless or pale yellow; unaffected by solution of nitrate of silver or nitrate of baryta, if previously diluted with distilled water.

Dubl. Ph. 1826.

Take of nitrate of potash, 100 parts; commercial sulphuric acid, 97 parts. Mix in a glass retort, and with an apparatus adapted to collecting the acid products, distil until the residuum in the retort shall concrete and again become liquid.

Acidum nitricum dilutum. *Dilute Nitric acid.*

Lond. Ph. 1836.

Take of nitric acid, a fluidounce; distilled water, 9 fluidounces. Mix.

Edin. Ph. 1841.

Mix together 1 fluidounce of pure nitric acid (D. 1500), and 9 fluidounces of distilled water. If the commercial nitric acid of D. 1390 be used, 1 fluidounce and 5½ fluid drachms are required. The density of this diluted acid is 1077.

Dubl. Ph. 1826.

Take of nitric acid, *by measure,* 3 parts; distilled water, *by measure,* 4 parts. Mix, avoiding the noxious vapours. The specific gravity of this acid is to that of distilled water as 1280 to 1000.

Medical Uses.—Anti-syphilitic, and more especially serviceable, where the employment of mercury is contra-indicated. When sufficiently diluted it forms an excellent lotion for old indolent ulcers. *Dose,* ♏x to ♏xl.

Acidum nitro-muriaticum. *Nitro-muriatic acid. Aqua regia.*

Dubl. Ph. 1826.

Take of nitric acid, by measure, 1 part; muriatic acid, by measure, 2 parts. Mix the acids in a refrigerated bottle, and keep the mixture in a cold and dark place.

On mixing the acids as above, although they may have been previously colourless, the mixture becomes of a deep yellow, and exhales a strong smell of chlorine and of nitrous acid. The following change is supposed to take place; $H\,Cl$, and NO^5, are converted into Cl, NO^4, and HO. This change takes place only so far as to saturate the liquid with chlorine; but if a metal be introduced into it, this unites with a portion of the chlorine, and the decomposition is then renewed, so that a supply of nascent chlorine is thus provided. On this account it is employed for dissolving gold and platina, which are not soluble in nitric acid. The name *Aqua regia* is derived from its power of dissolving gold, the ancient *Rex metallorum.*

ACIDUM NITROSUM. *Nitrous acid.* In chemical language the term *nitrous acid* is generally understood to refer to the compound NO^4, which contains 1 equivalent of oxygen less than nitric acid. Some chemists however, as Graham, apply the term *nitrous acid* to the compound NO^3. Both these compounds are gaseous under ordinary circumstances, and in this state are of an orange-red colour. They may both be condensed into the liquid form by cold or pressure, and in this state the former is orange-red, and the latter green. In commerce '*Nitrous acid*' is understood to designate the fuming liquid nitric acid, which is coloured orange-red by the presence of *nitrous acid.* (NO^4.)

ACIDUM OXALICUM. *Oxalic acid. Acid of sugar.*

This acid was discovered by Scheele. It exists in many vegetables, in combination with potash, as in *Oxalis acetosella*, *Rumex acetosa*, &c., or in combination with lime, as in rhubarb and other plants of that family. It may be and is occasionally obtained, for commercial purposes, from some of these sources; but generally, and in this country always, it is made by acting on sugar or starch with nitric acid. Oxalic acid consists of $C^2\,O^3$, but as thus composed it exists only in combination; combined with 3 equivalents of water it forms the crystallized oxalic acid of commerce. *Preparation.*—To a mixture of 5 parts of nitric acid, specific gravity 1·42, and 10 parts of water, contained in an earthen vessel, add 1 part of sugar or starch; apply the heat of a water-bath until nitrous vapours cease to be evolved, then evaporate a portion of the liquid and the oxalic acid will crystallize from the remainder on cooling. The mother liquor may be used with fresh ingredients in the next operation.

The crystals of oxalic acid resemble those of Epsom salts in appearance, and on this account have often been taken in mistake for the latter with fatal consequences. Oxalic acid, when taken into the stomach, or introduced into the circulation, acts as a powerful poison. Chalk or magnesia suspended in water is the best antidote. It is rarely, if at all, used medicinally. Its principal employment is for discharging certain colours in calico-printing; it is also used for removing ink and other stains from linen, &c., and for whitening boot-tops.

ACIDUM PHOSPHORICUM. *Phosphoric acid.* Symb. PO.^{5}

Phosphoric acid may be obtained in various ways; first, by setting fire to phosphorus on a metallic capsule, placed in the centre of a large stone-ware plate, and by covering this instanter by a large bell-jar. The phosphorus is thus converted into white flakes of phosphoric acid, which fall upon the plate like snow. The dry phosphoric acid, when exposed for a few minutes to the air, deliquesces. The anhydrous acid is perfectly fixed, unless in the presence of aqueous vapour, when it sublimes away. Phosphoric acid may be obtained, in combination with water, by acting on phosphorus with nitric acid. This is the method adopted by the London College. The same acid may also be obtained in large quantity from calcined bones by means of diluted sulphuric acid. Phosphoric acid is remarkable for possessing the property of forming three different salts of water, or three phosphates of water, which are all soluble without change, and exhibit quite different properties.

ACIDUM PHOSPHORICUM DILUTUM. *Dilute Phosphoric acid.*

Lond. Ph. 1836.

℞ Phosphorus, ℥j
Nitric acid, f℥iv
Distilled water, f℥x.

Add the phosphorus to the nitric acid mixed with the water in a glass retort placed in a sand-bath; then apply heat until 8 fluidounces are distilled. Put these again into the retort that 8 fluidounces may distil, which are to be rejected. Evaporate the remaining liquor in a capsule made of platina, until of the whole only 2 ounces and 6 drachms remain. Lastly, add to the acid, when it has cooled, as much distilled water as may be sufficient to make it accurately measure 28 fluidounces.

Note.—On adding chloride of barium, or nitrate of silver, whatever is thrown down is readily dissolved by nitric acid. Strips of copper and silver are not at all acted on by it, nor is it coloured when hydrosulphuric acid is added. Its specific gravity is 1·064; 42 grains of carbonate of soda are saturated by 100 grains of this acid, and nothing is thrown down.

Medical Uses.—Tonic. Is also found useful to correct a tendency to abnormal depositions of phosphate of lime, as in cases of exostosis, as also in some forms of urinary concretions. It has been found useful in forming an acidulated drink, which assuages the thirst so common in diabetes more effectually than any other. *Dose*, ♏xx to f℥i.

Acidum phosphoricum hydratum. *Hydrated Phosphoric acid. Glacial Phosphoric acid.*

Add a slight excess of carbonate of ammonia to the acid phosphate of lime obtained by the action of sulphuric acid on bone earth; separate by means of a filter the insoluble lime salt, and evaporate the solution, which will contain phosphate and sulphate of ammonia. This salt is afterwards to be exposed to a red heat in a platinum crucible, when the *hydrated phosphoric acid* alone will remain unvolatilized.

Acidum succinicum. *Succinic acid. Sal succini.*

This acid is said to exist in the resin of some of the *Coniferæ.* It is produced, together with suberic acid, by oxidizing margaric or stearic acid with nitric acid. The method, however, by which it is usually procured, is by submitting amber to distillation, when *succinic acid, oil of amber*, and *an acid liquor*, are obtained.

Dubl. Ph. 1826.

Take of amber reduced to coarse powder, pure sand, of each 1 part. On the application of heat gradually increased, an acid liquor, oil, and the acid in the crystallized form, will distil over. The latter should be received on bibulous paper, and exposed to strong pressure, to expel the oil, and again sublimed.

The crystals of succinic acid are in the form of scales or prisms. They have a slightly acid taste, and when pure are without smell. They dissolve in 2 parts of boiling and 5 parts of cold water.

Succinic acid has been administered in doses of from grs. v to grs. xv, as a stimulant and anti-spasmodic. Its chief use now is, in combination with ammonia, succinate of ammonia, as a test for the persalts of iron.

Acidum sulphuricum. *Sulphuric acid. Oil of vitriol.*

In strict chemical language the term *sulphuric acid* signifies the compound SO^3, which, at a temperature about 68° F., is a tenacious solid, having somewhat the appearance of asbestos. It is liquid at 77°, and enters into ebullition at a heat a little above that. This is generally distinguished as *dry* or *anhydrous sulphuric acid.* In this state it does not redden litmus paper. The term *oil of vitriol* applies only to the liquid sulphuric acid containing about 1 equivalent of water. This is the state in which alone it is met with in commerce, and to which the names above given are generally applied indiscriminately.

Oil of vitriol was first obtained by the distillation of green copperas or sulphate of iron, and this method is still adopted at Nordhausen in Saxony. When the copperas is previously well dried, a very strong acid, containing less than 1 equivalent of water, is obtained by this process, and this is distinguished in commerce as *Nordhausen oil of vitriol.*

An old but very unprolific method of making oil of vitriol was, to burn sulphur under a glass bell previously moistened inside with water, to collect this moisture afterwards, to expose it for some time to the air, then to boil it in a retort until white vapours cease to rise, when the liquid remaining in the retort will consist of sulphuric acid and water. The acid obtained in this way was called *oil of vitriol by the bell.*

The method now generally adopted of making *oil of vitriol* is, to burn either sulphur or iron pyrites, (native sulphuret of iron,) in a furnace adapted for the purpose, with access of air, and to conduct the vapour (sulphurous acid) which is given off, into a large chamber lined with lead, into which are also introduced nitrous acid gas, vapour of water, and atmospheric air. The bottom of the chamber is also covered with water. The sulphurous acid (SO^2) is converted into sulphuric acid, (SO^3,) at the expense of a portion of the oxygen of the nitrous acid, (NO^4,) which last is thus converted into hyponitrous acid. (NO^3). The sulphuric acid (SO^3) and hyponitrous acid, (NO^3,) together with a portion of water, combine to form a crystalline substance, which, on coming in contact with the water at the bottom of the chamber, is decomposed into oil of vitriol, binoxide of nitrogen, and nitrous acid gas. The binoxide of nitrogen is converted into nitrous acid by a portion of the oxygen of the atmospheric air present in the chamber, and then serves to oxidize a fresh portion of sulphurous acid. The sulphuric acid thus formed is accumulated in the water at the bottom of the chamber, until this acquires a specific gravity of 1·5 or 1·6, when it is removed for concentration, first into leaden vessels, and afterwards into vessels made of platinum. (*Graham.*)

Lond. Ph. 1836. *Acidum sulphuricum.*

It is free from colour; its specific gravity is 1·845. What remains after the acid has been distilled to dryness does not exceed the four-hundredth part of its weight.

Edin. Ph. 1841. *Acidum sulphuricum. Sulphuric acid of commerce.*

Density 1·840, or near it. Colourless. When diluted with its own volume of water only a scanty muddiness arises, and no orange fumes escape. When diluted with 12 volumes of water, sulphuretted hydrogen causes a white muddiness, but not a yellow precipitate.

Dubl. Ph. 1826. *Acidum sulphurium venale..*

The specific gravity of this is to that of distilled water as 1850 to 1000.

ACIDUM SULPHURICUM PURUM. *Pure Sulphuric acid.*

Edin. Ph. 1841.

If commercial sulphuric acid contain nitrous acid, heat 8 fluidounces of it with between 10 and 15 grains of sugar, at a temperature not quite sufficient to boil the acid, till the dark colour at first produced shall have nearly or altogether disappeared. This process removes nitrous acid. Other impurities may be removed by distillation, which on the small scale is easily managed by boiling the acid with a few platinum chips, in a glass retort, by means of a sand-bath or gas-flame, rejecting the first half ounce. Density 1·845. Colourless. Dilution causes no muddiness. Solution of sulphate of iron shows no reddening at the line of contact when poured over it.

Dubl. Ph. 1826.

Take of commercial sulphuric acid, a pound. Pass the acid into a retort of flint glass, attach a receiver of the same kind, and with the junctures of the vessels left open, let heat be applied to the retort until one-twelfth part of the liquor shall have distilled over; this, as it contains water, should be rejected. The receiver being again applied, the residuum is to be distilled to dryness.

A few slips of platina passed into the acid in the retort will restrain the ebullition, which otherwise would be too violent.

The specific gravity of this acid is to the specific gravity of distilled water as 1845 to 1000.

Let the acid be kept in well-closed vessels.

ACIDUM SULPHURICUM DILUTUM. *Diluted Sulphuric acid.*

Lond. Ph. 1836.

℞ Sulphuric acid - - - -	f℥iss.
Distilled water - - - -	f℥xivss.

Add the acid to the water gradually and mix. Diluted sulphuric acid is scarcely coloured by hydrosulphuric acid.

Edin. Ph. 1841.

Mix together f℥j of sulphuric acid and f℥xiij of water. The density of this preparation is about 1·090.

Dubl. Ph. 1826.

Take of pure sulphuric acid, 1 part; distilled water, 7 parts. Gradually add the acid to the water. The specific gravity of this acid is to that of distilled water as 1084 to 1000.

ACIDUM SULPHURICUM AROMATICUM. *Aromatic Sulphuric acid. Elixir of vitriol.*

	Edin. Ph. 1841.	Dubl. Ph. 1826.
℞ Sulphuric acid (commercial)	f℥iijss	℥vj. *by weight.*
Rectified spirit	Ojss.	f℥xxij.
Cinnamon, in moderately fine powder	℥jss.	℥iss.
Ginger, in moderately fine powder	℥j.	℥j.

Add the acid gradually to the spirit; let the mixture digest at a very gentle heat for three days in a closed vessel: mix the powders; [moisten them with a little of the acid spirit. Let the mass rest for twelve hours, and then put it into a percolator and transmit the rest of the acid spirit. This preparation may also be made by digesting the powders for six days in the acid spirit, and then straining the liquor. Edin.] [Add the powders to the liquid; digest for 6 days, and then filter through paper. Dubl.]

Lond. Ph. 1745. *Elixir vitrioli acidum. Acid elixir of vitriol.*

℞ Aromatic tincture,*	℔j.
Oil of vitriol	℥iv.

Mix gradually, and when the sediment has subsided filter through paper.

ACIDUM SULPHUROSUM. *Sulphurous acid.* (SO^2.)

Exists in the state of gas under ordinary circumstances, but assumes the liquid form at a few degrees above zero of Fahrenheit. Water at 60° Fahr. is capable of dissolving 37 times its volume of the gas.

Sulphurous acid is formed by the combustion of sulphur in atmospheric air. The best method of obtaining the solution of the gas in water is, to add ℥ss. of pounded charcoal to f℥iv. of oil of vitriol, in a retort, and to apply the heat of a lamp to the mixture; effervescence takes place from the liberation of sulphurous acid and carbonic acid gases; on conducting these by means of a bent tube into a bottle containing water, the former will be absorbed, while the latter passes off.

ACIDUM TANNICUM. *Tannic acid. Tannin.* ($C^{18}H^5O^9+3HO$.)

An organic acid, having a powerful astringent taste, existing in large quantity in oak bark, in nutgalls, and in different parts of many other vegetables.

U. S. Ph. 1842.

℞ Galls, in powder,
Sulphuric ether, each, a sufficient quantity.

Put into a glass adapter, loosely closed at its lower end with carded cotton, sufficient powdered galls to fill about one-half of it, and press the powder slightly. Then fit the adapter accurately to the mouth of a receiving vessel, fill it with the sulphuric ether, and close the upper orifice so as to prevent the escape of the ether by evaporation. The liquid which passes separates into two unequal portions, of which the lower is much smaller in quantity and much denser than the upper. When the ether ceases to pass, pour fresh portions upon the galls, until the lower stratum of liquid in the receiver no longer increases. Then separate this from the upper, put it into a capsule, and evaporate with a moderate heat to dryness. Lastly, rub what remains into powder

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* *Aromatic tincture.* Lond. Ph. 1745. Take of cinnamon, ʒvj.; coriander seeds, ʒiij.; long pepper, ginger, of each ʒij.; proof spirit, ℔ij. Macerate without heat, and strain.

The upper portion of liquid will yield by distillation a quantity of ether, which, when washed with water, may be employed in a subsequent operation.

Tannic acid is of a yellowish-white colour, of a strongly astringent taste: decomposed and entirely dispersed when thrown on red-hot iron; very soluble in water and less soluble in alcohol and in ether. Its solution reddens litmus, produces, with solution of gelatin, a white flocculent precipitate, with the salts of sesquioxide of iron a bluish-black precipitate, and with solutions of the vegetable alkalies, white precipitates very soluble in acetic acid.

ACIDUM TARTARICUM. *Tartaric acid.* Symb. of the crystallized acid $2\,HO + C_8\,H_4\,O_{10}$; a bibasic acid. This acid, first prepared by Scheele, exists in many fruits, and also as tartrate of lime in several roots, but is prepared only from the juice of the grape, which contains tartaric acid in the form of tartar or bitartrate of potash. This last salt precipitates during the fermentation of wine; in the crude state it is known as *argol;* when purified, as cream of tartar.

Lond. Ph. 1836.

℞ Bitartrate of potash, lb. iv.
Distilled water, boiling, cong. ijss.
Prepared chalk, ℥xxv. and ʒvj.
Diluted sulphuric acid, Ovij. and f℥xvii.
Hydrochloric acid, f℥xxvi., or q. s.

Boil the bitartrate of potash with 2 gallons of the distilled water, and add gradually half of the prepared chalk; afterwards, the effervescence having ceased, add the remainder of the chalk first dissolved in the hydrochloric acid with 4 pints of the distilled water. Lastly, set by the mixture that the tartrate of lime may subside; pour off the liquor, and wash the tartrate of lime frequently with distilled water till it is free from taste. Then pour on it the diluted sulphuric acid, and boil them for a quarter of an hour. Evaporate the strained liquor with a gentle heat, that crystals may be formed.

Edin. Ph. 1841.

℞ Bitartrate of potash, lb. iv.
Boiling distilled water, cong. ijss.
Prepared chalk, ℥xxv. and ʒvj.
Diluted sulphuric acid, Ox. and f℥viiss. or q. s.
Muriatic acid, f℥xxviss., or a sufficiency.

Boil the bitartrate with two gallons of the water, and add gradually half the chalk, constantly stirring. When the effervescence is over, add a solution obtained by dissolving the rest of the chalk in the muriatic acid diluted with 4 pints of the water. After the tartrate of lime has subsided pour off the liquid, and wash the tartrate with distilled water till it is tasteless; then pour the diluted sulphuric acid on the tartrate and boil for fifteen minutes. Evaporate with a gentle heat to obtain crystals. Purify these by repeated solution, filtration, and crystallization.

Dissolve the crystals, that they may be pure, again and a third time in water, and strain the solution as often, boil down, and set it aside.

Note.—Tartaric acid is totally soluble in water. The solution throws down bitartrate of potash from any neutral salt of potash. Whatever is precipitated from this solution by acetate of lead is dissolved by diluted nitric acid.

Note.—Tartaric acid, when incinerated with the aid of red oxide of mercury leaves no residuum, or a mere trace only.

Dubl. Ph. 1826.

℞ Bitartrate of potash, reduced to powder, 10 parts.
Prepared chalk, 4 parts.
Sulphuric acid, 7 parts.
Water, 120 parts.

Mix the bitartrate of potash with 100 parts of hot water, and gradually add the prepared chalk, then, as soon as the effervescence shall have ceased, pour off the clear supernatant liquor. Wash the residual tartrate of lime until it shall have become tasteless. Into the clear decanted liquor drop as much of the water of muriate of lime as may be sufficient to throw down the tartrate of lime. Let this also be washed with water and mixed with the former deposit. Then add the sulphuric acid diluted with 20 parts of water, and employing frequent agitation, digest the mixture with a *medium* heat during three days. Pour off the supernatant acid fluid, and wash out the acid from the sediment. Let these liquors, including the first acid liquor and the washings, evaporate with a gentle heat to the point of crystallization. Let the crystals, purified by repeated solutions and crystallizations, be kept in a stopped glass vessel.

Medical Uses.—As a substitute for citric acid, in preparing what are called sodaic powders. *Dose*, the same as that of citric acid.

ACIDUM VALERIANICUM. *Valerianic acid.* ($C^{10}\ H^9\ O^3 + HO.$)

A volatile organic acid, obtained, together with essential oil, by distillation from valerian root; obtained also by heating oil of potato-spirit with fused potash, decomposing the resulting salt with sulphuric acid, and separating the valerianic acid by distillation. When separated from water it has the appearance of a limpid oil, having a strong smell of valerian. Its specific gravity is 0.944. It boils at 270° Fahr. Soluble in all proportions in alcohol, ether, and oil of turpentine, and in 30 parts of water. The salts formed with valerianic acid have a sweet taste.

ACONITINA. *Aconitine.*

This is the active principle of several species of Aconite, in which plant it exists in combination with a vegetable acid. (aconitic acid?) It ranks among the vegetable alkalies or alkaloids.

Lond. Ph. 1836.

℞	Root of Aconite, dried and bruised	lb. ij.
	Rectified spirit . . .	cong. iij.
	Diluted sulphuric acid,	
	Solution of ammonia	
	Purified animal charcoal, of each .	q. s.

Boil the aconite with a gallon of the spirit for an hour in a retort to which a receiver is adapted. Pour off the liquor, and again boil the residue with another gallon of the spirit, and with the spirit recently distilled, and pour off the liquor also. Let the same be done a third time. Then press the aconite, and all the liquors being mixed and strained, let the spirit distil. Evaporate what remains to the proper consistence of an extract. Dissolve this in water and strain. Evaporate the liquor with a gentle heat, that it may thicken like a syrup. To this add of dilute sulphuric acid, mixed with distilled water, as much as may be sufficient to dissolve the aconitina. Then pour in solution of ammonia, and dissolve the aconitina precipitated in dilute sulphuric acid and water, mixed as before. Afterwards mix in the animal charcoal, frequently shaking them during a quarter of an hour. Lastly, strain, and solution of ammonia being again poured in, that the aconitina may be precipitated, wash and dry it.

Note.—An alkali prepared from the leaves and roots of aconite. It is very soluble in sulphuric ether, less in alcohol, and very slightly in water. It is totally consumed in the fire, no salt of lime remaining. This substance, possessing strong power, is not to be rashly employed.

It is sometimes used in neuralgic affections, in the form of an ointment, the proportion being 1 grain to 1 drachm of lard.

ADEPS. *Adeps suillus. Axungia. Lard. Hog's lard.*

The fat of the hog, obtained principally from about the loins and separated from the membranes in which it is contained by melting over a slow fire and straining through a cloth. When used in medicine it should have very little taste or smell, and be free from salt, which is sometimes added to preserve it from becoming rancid.

ÆRUGO. *Verdigris.*

This is an impure subacetate of copper, the composition of which is not always precisely the same. On the continent it is generally obtained by covering plates of copper with the fermenting marc of grapes. In this country, and sometimes on the continent, acetic acid is applied directly to the copper plates. Some specimens of verdigris are distinctly green, others approach to a blue colour. The latter kind is a definite compound of 1 eq. acetic acid, 2 eq. oxide of copper, and 6 eq. water; the former kind is a mixture of sesqui and tribasic acetates with the preceding bibasic acetate. (Graham.)

Lond. Ph. 1836.

Ærugo. Impure diacetate of copper. May be partly dissolved in water, and is almost entirely soluble either in ammonia or, with the assistance of heat, in diluted sulphuric acid.

Edin. Ph. 1841.

Ærugo. Commercial diacetate of copper. *Verdigris.* It is dissolved in a great measure by muriatic acid, not above 5 per cent. of impurity being left.

Dubl. Ph. 1826. *Cupri subacetas. Verdigris.*
CUPRI SUBACETAS PRÆPARATUM. *Prepared Verdigris.*

Dubl. Ph. 1826.

Let the subacetate of copper be triturated into powder, and let the finest parts be separated by the mode directed for the preparation of chalk.

ÆRUGO CRYSTALLIZATA. *Crystallized verdigris. Distilled verdigris.*

This is a neutral acetate of copper, obtained by dissolving oxide of copper, or more frequently common verdigris, in acetic acid, and allowing the solution to crystallize. The salt consists of 1 eq. acetic acid, 1 eq. oxide of copper, and 1 eq. water. It is perfectly soluble in water.

ÆTHER. *Æther sulphuricus. Ether. Sulphuric ether.*

A light, volatile, highly inflammable liquid, the vapour of which is heavier than atmospheric air. Its composition is represented by the symbol $C^4 H^5 O$. One part of ether is soluble in 10 parts of water, and 1 part of water is soluble in 36 parts of ether. It combines in all proportions with alcohol.

Lond. Ph. 1836. *Æther sulphuricus, Sulphuric ether.*

℞	Rectified spirit . . .	lb. iij.
	Sulphuric acid . . .	lb. ij.
	Carbonate of potass previously burnt	℥j.

Pour 2 pounds of the spirit into a glass retort, and to it add the acid, and mix. Then place it on sand and increase the heat, so that the liquor may boil as soon as possible, and the ether may pass into a receiving vessel cooled with ice or water. Let the liquor distil, until some rather heavy portion begins to pass over. Pour the remainder of the spirit on the liquor which remains in the retort, the heat being first diminished, that ether may distil in like manner.

Mix the distilled liquors, then pour off the supernatant portion, and to it add the carbonate of potash, occasionally shaking for an hour. Lastly, let the ether distil from a large retort, and let it be kept in a stopped vessel.

Note.—The specific gravity of this is ·750. It entirely evaporates in the air. That which is for sale fluctuates between ·733 and ·765. It reddens litmus slightly; it combines sparingly with water, namely, in the proportion of a fluidounce in half a pint of water, and continues limpid.

Edin. Ph. 1841. *Æther sulphuricus.*

℞ Rectified spirit . . . f℥ L.
Sulphuric acid . . . f℥x.

Pour twelve fluidounces of the spirit gently over the acid contained in an open vessel, and then stir them together briskly and thoroughly. Transfer the mixture immediately into a glass mattrass connected with a refrigeratory, and raise the heat quickly to about 280°. As soon as the etherial fluid begins to distil over, supply fresh spirit through a tube into the mattrass in a continuous stream, and in such quantity as to equal that of the fluid which distils over. This is best accomplished by connecting one end of the tube with a graduated vessel containing the spirit,—passing the other end through a cork fitted into the mattrass,—and having a stop-cock on the tube to regulate the discharge. When forty-two ounces have distilled over, and the whole spirit has been added, the process may be stopped. Agitate the impure ether with sixteen fluidounces of a saturated solution of muriate of lime, containing about half-an-ounce of lime recently slaked. When all odour of sulphurous acid has been thus removed, pour off the supernatant liquor, and distil it with a very gentle heat so long as the liquid which passes over has a density not above 736. More ether of the same strength is then to be obtained from the solution of muriate of lime. From the residuum of both distillations a weaker ether may be obtained in small quantity, which must be rectified by distilling it gently again.

Note.—Density 735 or under; when agitated in a minim measure with half its volume of concentrated solution of muriate of lime, its volume is not lessened.

Dubl. Ph. 1826. *Liquor æthereus sulphuricus. Sulphuric ethereal liquor.*

℞ Rectified spirit,
Sulphuric acid, of each, *by weight,* ℥xxxij.

Pour the spirit into a glass retort adapted to bearing a sudden heat, and then pour on the acid in an unbroken stream; mix them gradually, and let twenty ounces, *by measure*, of the liquor be distilled with a sudden and sufficiently strong heat, into a receiver kept cold.

If sixteen ounces of rectified spirit be poured upon the acid remaining in the retort, sulphuric ethereal liquor will again come over by distillation.

Dubl. Ph. 1826. *Æther sulphuricus. Sulphuric æther*

℞ Sulphuric ethereal liquor, *by measure* . ℥xx.
Carbonate of potash, dried and powdered ʒij.

Mix them, and from a very high retort distil, by a very gentle heat, 12 ounces, *by measure*, into a receiver kept cold. The specific gravity of the liquor should be to that of distilled water as 765 to 1000.

Med. Uses.—Internally it is used as a stimulant and antispasmodic. Dose fʒss. to fʒij. Externally as a refrigerant in the cases of scalds and burns.

ÆTHER ACETICUS. *Acetic ether.*

Codex, 1837.

℞ Rectified spirit, (sp. gr. 0·840), 100 parts by weight;
Acetic acid, (sp. gr. 1·075,) 66 parts by weight;
Strong oil of vitriol, 20 parts by weight.

Mix together the spirit and acetic acid in a glass retort, and then add the oil of vitriol. Adapt a refrigerator and receiver, and distil 130 parts by the heat of a sand-bath. To the distilled liquor add a small quantity of carbonate of potash, shake them together, and after allowing them to remain in contact for some hours, distil off 100 parts, which keep for use.

ÆTHER CHLORICUS. *Chloric ether. Chloroform. Terchloride of carbon.* These names have severally been applied to a liquid, having an ethereal smell, obtained by the distillation of a mixture of weak spirit and chloride of lime.

℞ Chloride of lime in powder . . .	lb. iv.
Water	lb. xij.
Rectified spirit	f℥xij.

Mix, in a capacious retort or still, and distill as long as a dense liquid, which sinks in the water with which it comes over, is produced.—*Dumas.*

This process is attended with some danger from the swelling up of the ingredients, when heat is applied. The product obtained by the above process should be rectified by agitating it with several portions of strong oil of vitriol, and afterwards distilling it from carbonate of baryta. When pure, it is a dense liquid, having a sp. gr. 1·480, and a sweet taste. Its composition is $C^2 H Cl^3$. This is Chloroform. It is soluble in alcohol, and in this form it is usually employed in medicine; the liquid sold as chloric ether being a mixture of the product described above, with about six or eight parts of rectified spirit.

ÆTHER HYDROCHLORICUS. *Æther muriaticus, Hydrochloric ether, Muriatic ether.* This ether was made by Paracelsus and Basil Valentine. The following process, which was given by Thenard, answers very well:—[Introduce into a retort equal volumes of the strongest hydrochloric acid, and absolute alcohol; adapt the retort, by means of a tube bent at right angles, with a three-necked bottle half filled with water at a temperature of 68° Fahr. to 77° Fahr. To the middle neck of the bottle a safety tube is attached, and to the third neck a bent tube communicating with an efficient condensing apparatus containing a freezing mixture. The apparatus being thus arranged, heat is to be gradually applied to the retort, when a mixture of ether and spirit will pass into the three-necked bottle, from whence the ether alone will distil over.] Pure hydrochloric ether is a colourless liquid, having no action on test paper. It has a strong ethereal smell, and sweetish taste. Its sp. gr. is 0·874 at 41° Fahr. It enters into ebullition at about 51° Fahr. It is soluble in an equal volume of water; and in all proportions in alcohol. Its composition is $C^4 H^5 Cl$.

Spiritus salis dulcis of the Edin. Pharm. 1722, is a mixture of hydrochloric ether and spirit. The following is the formula:—

[℞ Hydrochloric acid, 1 part; rectified spirits, 3 parts. Digest for several days, then distil from a retort, and repeat the distillation three or four times.]

ÆTHER NITROSUS. *Nitrous ether. Hyponitrous ether.* This is a combination of ether with the nitrous acid of Graham, (hyponitrous acid of Turner and Kane.) It is a pale yellow liquid, having a fragrant smell somewhat resembling that of apples. It boils at 62° Fahr. Sp. gr. 0·947 at 60° Fahr. It is soluble in 48 parts of water, and in all proportions in ether and alcohol.

Dubl. Ph. 1826. *Æther nitrosus, Nitrous ether.*

℞ Nitrate of potash, purified, dried, and coarsely powdered	lb.jss.
Sulphuric acid	lb. j.
Rectified spirit, *by measure*	℥xix.

Put the nitrate of potash into a tubulated retort placed in a bath of cold water, and pour on it by degrees and at intervals the sulphuric acid and the spirit, previously mixed and cooled after their mixture. Without almost any external heat, or at most a very gentle one, (as of warm water added to the bath,) the ethereal liquor will begin to distil without the application of fire; in a short time the heat in the retort will increase spontaneously, and a considerable ebullition will take place, which must be moderated by reducing the temperature of the bath with cold water; the receiver must also be kept cold with water or snow, and furnished with a proper apparatus for transmitting the highly elastic vapour (bursting from the mixture with great violence if the heat be too much increased) through a pound of rectified spirit contained in a cool phial.

The ethereal liquor thus spontaneously distilled, is to be received into a phial with a ground glass stopper, and there must be added by degrees (closing the phial after each addition) as much very dry and powdered carbonate of potash as will suffice to saturate the excess of acid, using litmus as a test; this is effected by the addition of about a drachm of the salt; in a short time the nitrous ether will rise to the surface, and is to be separated by means of a funnel.

If the ether be required very pure, distil it again to one-half, from a bath at a temperature of 140°. Its specific gravity is to that of distilled water as 900 to 1000.

Nitrous ether is formed in the first part of the process of the Edinb. Pharm. 1841, for Spiritus ætheris nitrici, which preparation consists of nitrous ether and spirits.

SPIRITUS ÆTHERIS NITRICI. *Spirit of nitric ether, Sweet spirit of nitre.*

Lond. Ph. 1836.

℞	Rectified spirit . .	lb. iij.
	Nitric acid . . .	℥iv.

Add the acid gradually to the spirit and mix; then let thirty-two fluidounces distil.

Note.—Specific gravity ·834. It slightly reddens the colour of litmus. On the addition of carbonate of soda no bubbles of carbonic acid come forth. It is also distinguished by a peculiar odour.

Edin. Ph. 1841.

℞	Rectified spirit . .	Oij. and f℥vj.
	Pure nitric acid (D. 1500) . .	f℥vij.

Put fifteen fluidounces of the spirit, with a litle clean sand, into a two-pint mattrass, fitted with a cork, through which are passed a safety-tube terminating an inch above the spirit, and another tube leading to a refrigeratory. The safety-tube being filled with pure nitric acid, add through it gradually three fluidounces and a-half of the acid. When the ebullition which slowly rises is nearly over, add the rest of the acid gradually, half a fluidounce at a time, waiting till the ebullition caused by each portion is nearly over before adding more, and cooling the refrigeratory with a stream of water, iced in summer. The ether thus distilled over, being received in a bottle, is to be agitated first with a little milk of lime, till it ceases to redden litmus-paper, and then with half its volume of concentrated solution of muriate of lime. The pure hyponitrous ether thus obtained, which should have a density of 899, is then to be mixed with the remainder of the rectified spirit, or exactly four times its volume.

Spirit of nitric ether ought not to be kept long, as it always undergoes decomposition, and becomes at length strongly acid. Its density by this process is ·847.

It effervesces feebly, or not at all, with solution of bicarbonate of potash: when agitated with twice its volume of concentrated solution of muriate of lime, 12 per cent. of ether slowly separates.

Dubl. Ph. 1826. *Spiritus æthereus nitrosus, Nitrous ethereal spirit.*

Add to the matter which remains after the distillation of nitrous ether, the rectified spirit employed in that operation for the elastic vapour, and distil till the residuum be dry, with the *greater* heat of a water-bath. Mix the distilled liquor with the alkaline liquor which remains after the separation of the nitrous ether, and add, moreover, as much well-dried carbonate of potash as shall be sufficient to saturate the predominant acid. This is made evident by the test of litmus. Lastly, distil as long as any drops come over by the medium of a water-bath.

The specific gravity of this liquor is to that of distilled water as 850 to 1000.

Nitrous ethereal spirit may also be prepared by adding gradually two ounces of nitric acid to a pound, *by measure*, of rectified spirit, and distilling twelve ounces with a proper apparatus and the application of a gentle heat.

Med. Uses. Refrigerant, antispasmodic, and diuretic. Dose ♏x. to ♏xl.

ÆTHER TEREBINTHINATUS. *Terebinthinated ether.*

Cadet de Gassicourt.

℞ Alcohol	lb. ij.
Spirit of turpentine	lb. ss.
Mix, and add gradually,	
Concentrated nitric acid	lb. ij.

Distil one-half of the mixture, at a gentle heat.

This is employed externally and internally in cases of biliary calculi, jaundice, engorgements of the liver, and rheumatism. *Dose*, from 20 to 40 drops, in honey or yolk of egg.

ÆTHIOPS ANTIMONIALIS. *Antimonial ethiops.*

Fuse together equal weights of black antimony and sea salt in a crucible for an hour; allow the contents of the crucible to cool: then rub together equal parts of this and of quicksilver until they are perfectly incorporated.—*James's Dispensatory*, 1764.

ÆTHIOPS MARTIALIS. *Martial ethiops.*

Put filings of steel into an unglazed earthen vessel, with so much water as will stand above them about four inches; the whole is to be well stirred every day, and more water supplied as that in the vessel evaporates, so that the filings may remain always covered; continue this procedure for several months, till the filings lose their metallic aspect, and are reduced to a fine powder of an inky blackness.—*Lewis's Dispensatory.*

ÆTHIOPS MINERALIS. *Ethiops mineral.*

Lond. Ph. 1721.

℞ Quicksilver,
Flowers of sulphur, each equal weights.

Rub them together in a glass mortar, until globules of mercury cease to appear.

ÆTHIOPS MINERALIS REDUCTUS.

℞ Ethiops mineral,
Black antimony, each equal parts.

Rub together until incorporated.

Given to horses for diseases of the skin, in doses of ʒj.

ÆTHIOPS PER SE.

This name was formerly applied to the protoxide of mercury, obtained by shaking quicksilver in a large bottle.

ÆTHIOPS PLUMMERI. *Plummer's alterative powder.*

This name was formerly applied to a mixture of equal parts of calomel and golden sulphuret of antimony.

ÆTHIOPS VEGETABILIS. *Vegetable ethiops.*

Obtained by incinerating the sea-weed, Fucus vesiculosus, in a covered crucible. It is said to contain traces of iodine, and to have proved beneficial in bronchocele and scrofulous maladies, in doses of grs. x. to ʒij.

ALCOHOL.

A clear, colourless, very mobile liquid. Its sp. gr. is 0·794 at 60° Fahr. It boils at 172° Fahr., and has not been frozen by any degree of cold hitherto produced. Its composition is $C^4 H^6 O^2$. The following formulæ are given in the British Pharmacopœias, but that of the Edinburgh College alone affords pure alcohol, the products of the other formulæ contain water.

Lond. Ph. 1836.

℞	Rectified spirit . . .	cong. j.
	Chloride of calcium . . .	lb j.

Put the chloride of calcium into the spirit, and when it is dissolved, let Ovij. f℥v. distil. The specific gravity of this is 0·815; it is free from colour; when heated it evaporates; it combines with water and with ether; it tastes and smells like wine.

Edin. Ph. 1841.

℞	Rectified spirit . . .	Oj.
	Lime	℥xviij.

Break down the lime into small fragments; expose the spirit and lime together to a gentle heat in a glass mattrass till the lime begins to slake; withdraw the heat till the slaking is finished, preserving the upper part of the mattrass cool with damp cloth. Then attach a proper refrigeratory, and with a gradually increasing heat distil off seventeen fluidounces. The density of this alcohol should not exceed 0·796; if higher, the distillation must have been begun before the slaking of the lime was finished. Density 794—6; when mixed with a little solution of nitrate of silver and exposed to bright light, it remains unchanged, or only a very scanty dark precipitate forms.

Dubl. Ph. 1826.

℞	Rectified spirit . . .	cong. j.
	Pearl-ashes, dried and still hot .	lb. iijss.
	Muriate of lime, dried .	lb. j.

Add the pearl-ashes in powder to the spirit, and let the mixture digest in a covered vessel for seven days, shaking it frequently. Draw off the supernatant spirit, and mix with it the muriate of lime; lastly, distil with a moderate heat until the mixture in the retort begins to thicken. The specific gravity of this liquor should be ·810.

ALCOHOL DILUTUM. *Diluted alcohol.*

U. S. Ph. 1840.

℞ Alcohol, Distilled water, of each, Oj. Mix.

Sp. gr. 935.

ALEGAR. *Acetum cerevisiæ.*

Ferment strong ale upon the cuttings of the vine, unripe grapes, or cheap raisins, so as to form a vinegar.

ALUMEN. *Alum.*

A double sulphate of alumina and potash, its composition when crystallized being, $KO, SO^3 + Al^2O^3, 3SO^3 + 24HO$, that is, one eq. of sulphate of potash, one eq. of sulphate of alumina, and 24 eq. of water. It occurs native, but for commercial purposes is prepared artificially. The manufacture of alum is conducted according to what is called "*the natural process*," or "*the artificial process*." This distinction is incorrect, as both are artificial. According to the former process, *alum schist*, which contains sulphuret of iron, and alumina, and sometimes potash, is either exposed in heaps to the oxydizing agency of the air and moisture, the sulphur combining with oxygen to form sulphuric acid, which with the alumina and potash constitutes the alum; or, the schist is piled in heaps and burned, when a similar change takes place as in the other case. What is called the *artificial process*, which is adopted at Newcastle-on-Tyne, consists in directly acting upon and dissolving out the alumina of clay with sulphuric acid, and adding the salt of potash to this.

Alum crystallizes in regular octohedrons, the solid angles of which are often replaced by the surfaces of a cube. It is soluble in 18·4 parts of cold water, and in 0·75 parts of boiling water. It has a sweet taste, and an acid reaction, ALUMEN RUPEUM. *Roch alum, Roch alum.*

These terms were formerly applied to the colourless, transparent alum, in large masses, as would appear from Pomet and other ancient authors; but the term Roch alum is now used synonymously with the following:—

ALUMEN ROMANUM. *Roman alum, Alumen rubrum, Rochi gallis, Roch alum.*

This was originally brought from Civita Vecchia in Italy, where it occurs native. It occurs in small fragments, covered with a reddish powder, part of the soil from which it is dug. This alum has been much valued by dyers on account of its being free from iron, which the manufactured alum is not. The alum now sold as Roch or Roman alum is nothing more than common manufactured alum coloured with Armenian bole.

ALUMEN EXSICCATUM. *Dried alum. Alumen ustum. Burnt alum.*

Lond. Ph. 1836.

Let alum melt in an earthen vessel over the fire; then let the fire be increased, until the ebullition has ceased.

Edin. Ph. 1831.

Take any convenient quantity of alarm; fuse it over the fire in a vessel of iron or earthenware; continue the heat till ebullition ceases and vapour is no longer discharged; and then reduce it to powder.

Dubl. Ph. 1826. *Alumen siccatum.*

Take of alum any requisite quantity; let it be exposed to heat in a vessel of earthenware until it ceases to boil up; then let it be reduced to powder.

AMADOU. *German tinder. Touchwood. Spunk.*

The *Boletus fomentarius*, when softened by beating, and cut into slices. is the true *amadou;* and this, when soaked in solution of saltpetre and dried, is *German tinder. Boletus igniarius, Touchwood,* or *Spunk,* is frequently substituted for *Boletus fomentarius.*

AMALGAM, *for electrical machines.*

Fuse ℥ij. of zinc in a crucible, add ℥v. of quicksilver, previously heated, and rub them together.

AMBERGRISEA. *Ambergris.*

A solid, opaque, greyish, or sometimes nearly black substance, having a smell resembling that of dried cow-dung. It is obtained from the cachalot or sperm whale, and is supposed to be the indurated fœces of the whale somewhat altered by disease. It is used in perfuming, and has been supposed to possess aphrodisiac properties in doses of 3 to 10 grains.

AMMONIA.

This, which is commonly called the volatile alkali, consists of nitrogen and hydrogen, in the proportions of 1 eq. of the former to 3 eq. of the latter (NH^{3}.) Under ordinary circumstances, it exists as a gas, which is very soluble in water and in spirit. Water takes up nearly 800 times its volume of the gas at 32° Fahr. The watery solution of ammonia possesses most of the chemical properties of the gas, and therefore it is usually employed in that form.

AMMONIÆ ACETAS. *Acetate of ammonia.*

This salt in solution has been long used in medicine, having been introduced to notice in the early part of the seventeenth century by Mindererus, and therefore called Mindererus's spirit.

Lond. Ph. 1836. *Liquor ammoniæ acetatis. Solution of Acetate of ammonia.*

℞ Sesquicarbonate of ammonia	℥ivss. or q. s.
Distilled vinegar . .	Oiv.

Add the sesquicarbonate of ammonia to the vinegar to saturation.

It is not coloured by the addition of hydrosulphuric acid, nor is anything precipitated by nitrate of silver or chloride of barium. The water being evaporated, the residue yields ammonia, and is dissipated by heat.

Edin. Ph. 1841. *Ammoniæ acetatis aqua. Water of Acetate of ammonia.*

℞ Distilled vinegar (from French vinegar in preference) . .	f℥xxiv.
Carbonate of ammonia . .	℥i.

Mix them and dissolve the salt. If the solution has any bitterness, add by degrees a little distilled vinegar till that taste be removed. The density of the distilled vinegar should be 1005, and that of the aqua acetatis ammoniæ 1011.

Note.—This is a diluted aqueous solution of acetate of ammonia. Without action on litmus. Density 1014. Free of colour or odour. Solution of potash disengages an ammoniacal, sulphuric acid an acetous odour. Unaffected by solution of nitrate of silver.

Dubl. Ph. 1826. *Ammoniæ acetatis aqua. Water of Acetate of ammonia.*

Take of carbonate of Ammonia 1 part. Add gradually, and with frequent agitation, as much distilled vinegar as may be requisite to saturate the ammonia, namely, about 30 parts. The saturation may be determined by means of litmus.

Med. Uses.—When assisted by warmth and copious dilution, this is a valuable diaphoretic in the dose of from fʒiv. to fʒvi. Externally, as a lotion, it is a refrigerant.

AMMONIÆ BENZOAS. *Benzoate of ammonia.* Solution of ammonia is saturated with benzoic acid with the application of a gentle heat, and the salt allowed to crystallize on cooling.

AMMONIÆ BICARBONAS. *Bicarbonate of ammonia. Berthollet's neutral Carbonate of ammonia.*

Dubl. Ph. 1826.

Take of water of carbonate of ammonia any required quantity. In a suitable apparatus let the water be exposed, until the alkali is saturated, to the stream of carbonic acid gas which escapes during the solution of white marble in diluted muriatic acid. Then let it rest and let crystals form, which are to be dried without heat and preserved in a closed vessel.

AMMONIÆ HYDROCHLORAS. *Hydrochlorate of ammonia. Muriate of ammonia. Chloride of ammonium. Sal-ammoniac.*

This salt is now made in this country from the ammoniacal liquor obtained in the manufacture of coal gas and animal charcoal. This liquor is either saturated directly with hydrochloric acid and evaporated to crystallization, and the impure salt thus obtained purified by sublimation; or sulphuric acid is first added to the ammoniacal liquor, and the resulting sulphate of ammonia afterwards decomposed with common salt during the process of sublimation. The sublimed sal-ammoniac is in large flattened hemispherical cakes. It is slightly deliquescent; soluble in 3 parts of cold and in 1 part of boiling water; soluble also in alcohol.

AMMONIÆ HYDROSULPHAS. *Hydrosulphate of ammonia. Hydrosulphuret of ammonia. Hepatized ammonia. Boyle's Fuming liquor. Beguin's Sulphuretted spirit.*

These are composed of hydrogen, sulphur, and ammonia.

Dubl. Ph. 1826. *Ammoniæ hydrosulphuretum.*

℞ Sulphuret of iron reduced to coarse powder, 5 parts;
Sulphuric acid, 7 parts;
Water, 32 parts;
Water of caustic ammonia, 4 parts.

Put the sulphuret into a retort, then gradually pour on it the acid, first diluted with water, and in a suitable apparatus cause the elastic fluid to pass through the water of ammonia. Towards the end of the process apply a moderate heat to the retort.

Brande gives the following process for a similar preparation:—

Boyle's Fuming liquor.

℞ Slaked quick-lime, 4 parts;
Hydrochlorate of ammonia, 2 parts;
Sulphur, 1 part.

Introduce these into a tubulated earthen retort, the neck of which is attached to a quilled and tubulated receiver. The quill of the receiver is inserted into an empty bottle, and a bent tube from the tubulure of the receiver is made to dip into a bottle half filled with water. On applying the heat of a sand-bath to the retort, and keeping the receiver cool, a fuming liquor will condense in the latter, and vapour will pass over and be condensed in the bottle containing water. The whole distilled products are afterwards to be mixed together.

LIQUOR AMMONIÆ. *Solution of ammonia.*

Lond. Ph. 1836.

℞	Hydrochlorate of ammonia . .	℥x.
	Lime	℥viij.
	Water	Oij.

Put the lime slacked with water into a retort, then add the hydrochlorate of ammonia broken into small pieces, and the rest of the water. Let 15 fluid ounces of solution of ammonia distil.

Note.—By heat it totally evaporates in evanescent alkaline vapours, as shown by turmeric. It gives no precipitate with lime-water. When saturated with nitric acid, neither sesquicarbonate of ammonia nor nitrate of silver throws down anything. The specific gravity of this solution is 0·960.

AMMONIÆ LIQUOR FORTIOR. *Stronger solution of Ammonia.*

Lond. Ph. 1836.

The specific gravity of this is 0·882. This solution may be reduced to the strength of liquor ammoniæ by adding to each f℥. of it f℥ij. of distilled water.

AMMONIÆ AQUA et AMMONIÆ AQUA FORTIOR.

Edin. Ph. 1841.

℞	Muriate of ammonia . .	℥xiij.
	Quick lime	℥xiij.
	Water	f℥vijss.
	Distilled water . . .	f℥xij.

Slake the lime with the water, cover it up till it cool, triturate it well and quickly with the muriate of ammonia previously in fine powder, and put the mixture into a glass retort, to which is attached a receiver with a safety-tube. Connect with the receiver a bottle also provided with a safety-tube, and containing 4 ounces of the distilled water, but capable of holding twice as much. Connect this bottle with another loosely corked, and containing the remaining eight ounces of distilled water. The communicating tubes must descend to the bottom of the bottles at the further end from the retort, and the receiver and bottles must be kept cool by snow, ice, or a running stream of very cold water. Apply to the retort a gradually increasing heat till gas ceases to be evolved; remove the retort, cork up the aperture in the receiver where it is connected with the retort, and apply to the receiver a gentle and gradually increasing heat, to drive over as much of the gas in the liquid contained in it, but as little of the water, as possible. Should the liquid in the last bottle not have the density of 960, reduce it with some of the stronger aqua ammoniæ in the first bottle, or raise it with distilled water, so as to form aqua ammoniæ of the prescribed density.

AMMONIÆ CAUSTICÆ AQUA. *Water of Caustic ammonia.*

Dubl. Ph. 1826.

℞ Muriate of ammonia, reduced to powder, 3 parts;
Fresh burned quicklime, 2 parts;
Water, 10 parts.

On the quicklime passed into an earthen vessel, sprinkle one part of hot water, and cover the vessel. Let the salt be dissolved in the remaining hot water. When the lime has fallen into a powder and become cool, let it be passed into the retort and the saline liquor added to it. With a *medium* heat, let 4 parts distil into a refrigerated receiver.

The specific gravity of this liquor is to that of distilled water as 950 to 1000.

Med. uses.—Stimulant, rubefacient, and antacid; it may be exhibited in milk, water, or any cold liquid not incompatible with it. Dose, ♏x. to ♏xxx. If swallowed by mistake, vinegar or lemon-juice will form the best antidote.

AMMONIÆ NITRAS. *Nitrate of ammonia. Nitrum semivolatile. Nitrum flammans.* (NH^3, NO^5+HO.)

This salt is obtained by saturating dilute nitric acid with sesquicarbonate of ammonia, and evaporating the solution to crystallization. The salt is very soluble in water; it fuses at 230° Fahr.; at about 460° Fahr. it is decomposed into *nitrous oxide gas* and *water*. It is principally employed as the source of nitrous oxide gas.

AMMONIÆ OXALAS. *Oxalate of ammonia.* (NH^3, C^2O^3+2HO.)

Formed by neutralizing solution of oxalic acid with ammonia or sesquicarbonate of ammonia, and crystallizing. This is chiefly used as a test for lime.

AMMONIÆ SESQUICARBONAS. *Sesquicarbonate of ammonia. Carbonate of ammonia. Smelling salts.*

Lond. Ph. 1836. *Ammoniæ sesquicarbonas.*

℞ Hydrochlorate of ammonia .	lb. i.
Chalk	lb. iss.

Rub them separately to powder; then mix, and with heat, gradually increased, sublime.

Note.—In the crystalline form, translucent, but falls to powder in the air. It is totally dissipated by heat. It is entirely soluble in water; it changes the colour of turmeric. Nitric acid being added to it to saturation, nothing is thrown down either by chloride of barium or nitrate of silver.

Edin. Ph. 1841. *Ammoniæ Carbonas.*

℞ Sal-ammoniac . . .	lb. i.
Chalk	lb. iss.

Reduce them separately to fine powder, mix them thoroughly, and subject the mixture in a retort with a proper receiver to a gradually increasing heat so long as any vapours sublime.

Note.—Heat sublimes it entirely. A solution in water, when treated with nitric acid in excess, does not precipitate with solution of nitrate of baryta or nitrate of silver.

Dubl. Ph. 1826. *Ammoniæ carbonas.*

℞ Muriate of ammonia, pulverized and well dried,
Dried carbonate of soda, of each 1 part.

Pass the mixture into an earthenware retort, and with a heat gradually increased, sublime the carbonate of ammonia into a refrigerated receiver.

Med. uses.—Stimulant, antispasmodic, diaphoretic, antacid, and in large doses emetic. Should not be kept in powdered mixtures. Even the form of pill is by no means an eligible form of administering it. Dose, gr. v to gr. xx.

AMMONIÆ SULPHAS. *Sulphate of ammonia.*

Formed by saturating dilute sulphuric acid with sesquicarbonate of ammonia and crystallizing. It is usually formed in an impure state during the process for the preparation of salammoniac. It is also obtained in large quantities by a process adopted for purifying coal gas.

AMMONIACUM.

Lond. Ph. 1836.—Gum-resin of Dorema ammoniacum.

Edin. Ph. 1841.—Gummy-resinous exudation of Dorema ammoniacum. Ammoniac.

Dubl. Ph. 1836.—The gum-resin of Heracleum gummiferum, or Gum-bearing cow parsnip.

The ammoniacum gum-resin occurs in grains or tears, when it is called *Ammoniacum in lachrymis* or *in granis;* and also in lumps, when it is called *ammoniacum in massis.* It has a pale yellow colour, is opaque, and has a bitter, nauseous taste.

AMYLUM. *Starch.*

A vegetable proximate principle, which exists abundantly in the vegetable kingdom. It is principally procured from wheat, from potatoes, and from rice. A patent was taken out for its preparation from rice. Starch obtained from the two last-named sources is usually distinguished as potato-starch, and rice or patent starch. The different kinds of starch may be distinguished, with the aid of a microscope, from differences in the size and shape of the grains.

ANNOTTO. *Arnotto. Orleana.*

A red colouring matter obtained from the seeds of *Bixa orellana;* used in dyeing, and for colouring cheese. *Flag annotto* is in square cakes, weighing two or three pounds each. *Egg annotto* is in cakes of an egg-shape, and *Roll annotto* in long rolls. The colour of annotto is changed to blue by strong sulphuric acid.

AMYLI IODIDUM. *Iodide of starch.*

Triturate 24 grains of iodine with a little water, and add gradually ʒj. of finely powdered starch, continuing the trituration until the compound assumes a uniform blue colour. It is then to be dried by a gentle heat and kept in a stoppered bottle.

Dr. A. Buchanan of Glasgow has proposed this compound as a means of administering iodine in large doses without causing irritation of the stomach. The dose is a heaped teaspoonful, given in water-gruel, three times a-day; and it may be increased to a tablespoonful or more. Dr. Buchanan conceives that, by means of the starch, the iodine is converted into hydriodic acid, and in this state enters into the circulation. He prefers it to any other preparation of iodine for producing the alterative, apart from the irritant, effects of that medicine.

ANTHRAKOKALI, or *Anthracokali.*

Form a caustic solution of potassa, with ℥vj. carbonate of potash, ℥iijss. lime, and Oiv. water; evaporate this in an iron vessel until it shall measure about f℥vj., then stir in ℥v. of finely-powdered mineral coal; withdraw the vessel from the fire, and continue to stir the mixture until it is reduced to the condition of a uniform black powder, which is to be immediately put into dry, well-stopped bottles.

Administered in cases of chronic rheumatism, scrofula, &c. *Dose*, 2 grains, two or three times a-day. (Poyla.)

ANTHRAKOKALI SULPHURETUM. *Sulphuretted Anthrakokali.*

Prepared as the last, but with the addition of ʒiv. of sulphur.

UNGUENTUM ANTHRAKOKALI. *Anthrakokali ointment.*

℞	Anthracokali	ʒj.
	Lard	℥j. Mix.

ANTI-ATTRITION.

℞	Lard	lb. x.
	Camphor	℥iv.
	Blacklead	lb. ss. Mix.

Used to diminish friction, and to prevent iron from rusting. A patent was taken out for a compound under the above name, consisting of 1 part of plumbago, and 4 parts of hogslard or other grease.

ANTIMONIUM. *Antimony. Regulus of antimony.* (*Symb.* Sb. *eq.* 65 or 129·24.)

Specific gravity 6·7. It is usually obtained from the native sulphuret.

ANTIMONIUM CALCINATUM. *Calx antimonii. Diaphoretic antimony.*

Lond. Ph. 1788.

℞	Sesquisulphuret of antimony	℥viij.
	Nitrate of potash	℥xxiv.

Mix, and deflagrate in a crucible heated to redness. Calcine the residue for half an hour, and when cold, powder it, and wash away whatever is soluble with repeated quantities of water. Collect and dry the residue.

ANTIMONII CINIS. *Antimony-ash.*

This is obtained by roasting the sesquisulphuret of antimony, by which means part of the sulphur is burned away, and a mixture of sesquioxide and sesquisulphuret of antimony remains, with probably a little antimonious acid.

ANTIMONII CROCUS. *Crocus metallorum. Liver of antimony. Saffron of antimony.*

Lond. Ph. 1788.

℞	Sesquisulphuret of antimony	lb. j.
	Nitrate of potash	lb. j.
	Chloride of sodium	℥j.

Mix, and deflagrate in a crucible heated to redness; separate the scoria, and preserve the fused mass.

It may also be made by fusing antimony ash.

ANTIMONII CROCUS LOTUS. *Washed Liver of antimony.*

The *Crocus antimonii* of the Lond. Ph. 1788, repeatedly washed with water.

ANTIMONII OXYDUM. *Oxide of antimony, Sesquioxide of antimony, Protoxide of antimony.*

Edin. Ph. 1841. *Antimonii oxidum.*

℞	Sulphuret of antimony in fine powder	℥iv.
	Muriatic acid (commercial)	Oj.
	Water	Ov.

Dissolve the sulphuret in the acid with the aid of a gentle heat; boil for half an hour; filter; pour the fluid into the water; collect the precipitate on a calico filter: wash it well with cold water, then with a weak solution of carbonate of soda, and again with cold water, till the water ceases to affect reddened litmus paper. Dry the powder over the vapour-bath.

Dubl. Ph. 1826. *Antimonii oxydum nitro-muriaticum.*

℞ Prepared sulphuret of antimony, *twenty parts;*
Muriatic acid, *one hundred parts;*
Nitric acid, one part.

Gradually add the sulphuret to the acids, previously mixed in a glass vessel, avoiding the vapours; then with a heat gradually increased, digest, until the mixture ceases to effervesce, then boil during an hour. Receive the cooled and filtered liquor in a gallon of water. Let the oxide of antimony, when it has subsided, be washed with a sufficiently abundant quantity of water, until the decanted fluid shall have become free from acid, which may be ascertained by means of litmus; finally, let the oxide be dried on bibulous paper.

The precipitates formed in the two foregoing processes constitute the *Pulvis algarothi*, or *Algaroth's powder*, sometimes called *Mercurius vitæ*, or *Mercury of life*. It consists of oxide of antimony with a little chloride of antimony, and is sometimes called the *Oxychloride of antimony*. On washing the precipitate, as directed in the Edinburgh Pharmacopœia, with solution of carbonate of soda, the whole of the chlorine is removed, and protoxide of antimony remains. The same oxide may also be obtained by adding solution of ammonia to a concentrated solution of emetic tartar, and heating the mixture, when the oxide of antimony is precipitated.

ANTIMONII OXYSULPHURETUM. *Oxysulphuret of antimony*, (L.) *Antimonii sulphuretum aureum*, (E.) *Sulphur antimoniatum fuscum*, (D.)

Lond. Ph. 1836.

℞ Sesquisulphuret of antimony, powdered . . .	℥vij.
Solution of potash . .	Ov
Distilled water . .	Cong. ij.
Diluted sulphuric acid .	q. s.

Mix the sesquisulphuret of antimony, solution of potash and water, together, and boil with a slow fire for two hours, occasionally stirring, distilled water being frequently added, so that it may fill up about the same measure. Strain the liquor, and drop into it by degrees as much sulphuric acid as may suffice to throw down the oxysulphuret of antimony; then wash away the sulphate of potash with water, and what remains dry with a gentle heat.

Note.—Entirely soluble in nitro-hydrochloric acid, emitting hydrosulphuric acid.

Edin. Ph. 1841.

℞ Sulphuret of antimony, in fine powder . . .	℥j.
Solution of potash . .	f℥xj.
Water	Oij.

Mix the water and solution of potash, add the sulphuret, boil for an hour, filter immediately, and precipitate the liquid, while hot, with an excess of diluted sulphuric acid. Collect the precipitate on a calico filter, wash it thoroughly with water, and dry it with a gentle heat.

A mixture or compound of sesquisulphuret of antimony, sesquioxide of antimony, and sulphur.—*Golden Sulphuret of Antimony.* Tasteless: twelve times its weight of muriatic acid aided by heat will dissolve most of it, forming a colourless solution, and leaving a little sulphur.

Dubl. Ph. 1826.

℞ Prepared sulphuret of antimony,	1 part,
Water of caustic potash,	18 parts,
Diluted sulphuric acid,	11 parts, or q. s.

Add the sulphuret of antimony to the water of caustic potash, and boil during an hour. Filter the hot liquor through a doubled linen cloth, and drop into it the diluted sulphuric acid. Wash off the sulphate of potash with warm water. Dry the brown antimoniated sulphur, and triturate it into a fine powder.

The precipitates obtained by the foregoing processes are much darker coloured than that which is met with in commerce under the name of Golden Sulphuret of Antimony.

One of the following processes will yield a product more nearly resembling the usual commercial article :—

1.

℞ Sesquisulphuret of antimony, 4 parts,
Lime, 8 parts,
Water, 80 parts.

Boil for half an hour and strain ; then add hydrochloric acid in excess. Collect, wash and dry the precipitate.

The whole of the hydrochloric acid should be added at once.

2.

℞ Sesquisulphuret of antimony, 2 parts,
Carbonate of potash, 4 parts,
Sulphur, 1 part.

Mix, and fuse the mixture in a crucible. When cold, powder the fused mass, and boil it with twenty times its weight of water for half an hour; strain the liquor, and add a large excess of diluted sulphuric acid. Collect, wash, and dry the precipitate.

ANTIMONII POTASSIO-TARTRAS, *Potassio-tartrate of antimony*, (L.) ANTIMONIUM TARTARIZATUM, (E.) ANTIMONII ET POTASSÆ TARTRAS, sive TARTARUM EMETICUM, (D.)

Lond. Ph. 1836.

℞ Sequisulphuret of antimony, reduced to powder.	
Nitrate of potash, āā.	lb. ij.
Bitartrate of potash	℥xiv.
Hydrochloric acid	f℥iv.
Distilled water	cong. i.

Carefully mix the sesquisulphuret of antimony with the nitrate of potash, occasionally adding hydrochloric acid, and the powder being spread on an iron plate, ignite it. Rub that which remains into a very fine powder when it shall have cooled, and wash it with boiling water frequently poured on, until it is free from taste. Mix the powder thus prepared with the bitartrate of potash, and boil for half an hour in a gallon of distilled water. Strain the liquor while still hot, and set aside that crystals may form. These being removed and dried, let the liquor again evaporate until it may form into crystals.

Note.—It is entirely soluble in water, no bitartrate adhering to the vessel, and on the addition of hydrosulphuric acid, it throws down a precipitate of a reddish colour. This liquor throws down no

Edin. Ph. 1841.

℞ Sulphuret of antimony in fine powder	℥iv.
Muriatic acid (commercial)	Oi.
Water	Ov.

Dissolve the sulphuret in the acid with the aid of a gentle heat; boil for half an hour; filter; pour the liquid into the water; collect the precipitate on a calico filter, wash it with cold water till the water ceases to redden litmus-paper; dry the precipitate over the vapour-bath

℞ This precipitate	℥iij.
Bitartrate of potash	℥iv. & ʒij.
Water	f℥xxvii.

Mix the powders, add the water, boil for an hour, filter, and set the liquid aside to crystallize. The mother liquor, when concentrated, yields more crystals, but not so free of colour, and therefore requiring a second crystallization.

Entirely soluble in twenty parts of water; solution colourless, and not affected by solution of ferro-cyanide of potassium ; a solution in 40 parts of water is not affected by its own volume of a solution of eight parts of acetate of precipitate on adding either chloride of barium or nitrate of silver. It throws down a precipitate with nitric acid, which an excess of the same acid dissolves.

lead in thirty-two parts of water and fifteen parts of acetic acid.

Dubl. Ph. 1826.

℞ Nitro-muriatic oxide of antimony, 4 parts.
Bitartrate of potash, triturated to a most subtle powder, 5 parts.
Distilled water, 34 parts.

Heat being applied, let the water boil in a glass vessel; then gradually pass into the water the oxide and bitartrate of potash previously mixed, and boil during half an hour; then filter the liquor through paper, and let it cool slowly, that crystals may be formed.

Use.—It acts as a diaphoretic, emetic, or purgative, according to the dose. From $\frac{1}{8}$ to $\frac{1}{4}$ of a gr. *sweats;* $\frac{1}{2}$ gr. *purges* and *sweats;* 1 gr. *vomits, sweats* and *purges.* Best given in solution.

ANTIMONII SESQUICHLORIDUM. *Sesquichloride of antimony. Butter of antimony.* $(Sb^2 Cl^3)$.

Lond. Ph. 1746.

℞ Antimony . . . . lb. j.
Corrosive sublimate . . . lb. ij.

Let them be reduced to powder separately, well mixed, and let them be distilled from a retort, the neck of which must be large, by a gentle sand heat; let that which ascends into the neck of the retort be dissolved by exposure to the air.

What remains in the retort, after the distillation is over, is the sulphuret of mercury, called also the *Cinnabar of antimony;* the reason of the name is hence sufficiently obvious.

Lond. Ph. 1787.

℞ Crocus of antimony reduced to powder,
Sulphuric acid of each . lb. i.
Dried chloride of sodium . . lb. ij.

Pour the sulphuric acid into the retort, gradually adding the chloride of sodium and crocus of antimony previously mixed: then distil by a sand bath. Let the matter distilled be exposed to the air for several days; then let the liquid portion be poured off from the dregs.

The dark brown liquid met with in commerce under the name of *Muriate of antimony*, or *Butter of antimony*, is usually made by decomposing sesquisulphuret of antimony with hydrochloric acid, with the aid of heat.

ANTIMONII SESQUISULPHURETUM. SESQUISULPHURET OF ANTIMONY. ANTIMONII SULPHURETUM, (E.) ANTIMONII SULPHURETUM PRÆPARATUM, (D.)

This is the black sulphuret of antimony, and was anciently used by the Asiatic and Greek ladies as a pigment for the eyebrows. In the native state it is technically termed *Antimony ore*, and when first fused out of its gangue, *Crude antimony*, or *Sulphuret of antimony*. It is obtained by fusion from its silicious gangue. It forms the source of the other preparations of antimony. The Dublin College gives a formula for its preparation.

Dubl. Ph. 1826. *Antimonii sulphuretum præparatum.*

℞ Sulphuret of antimony, any requisite quantity.

Reduce to powder, according to the mode directed in the preparation of chalk, and let the most subtle particles be preserved for use.

Antimonium vitrificatum. *Vitrified antimony. Glass of antimony.*

Lond. Ph. 1788.

℞ Sesquisulphuret of antimony in powder, any quantity.

Burn it in a broad earthen vessel with a fire gradually increased, stirring it constantly with an iron rod, until it ceases to give off sulphurous vapours. Put the powder that remains into a crucible, of which it shall fill two-thirds; fit on a cover, and heat it in the fire, first moderately, and afterwards with an intense heat, so as to fuse the mass. When fused, pour it out on an iron slab.

Antimonii vitrum ceratum. *Ceratum antimonii vitrum. Cerated glass of antimony.*

℞ Glass of antimony in powder . .	℥j.
Yellow wax	ʒj.

Melt the wax in an iron vessel and throw into it the powdered glass of antimony; keep the mixture over a gentle fire for half an hour, continually stirring it; then pour it out upon a paper, and when cold reduce it to a powder.

The glass melts in the wax with the aid of a gentle heat. After it has been over the fire for about twenty minutes, it begins to change colour, and in ten minutes more, it assumes nearly the colour of Scotch snuff, which is an indication that the process is completed. The above quantity loses about one drachm in weight during the process.

This preparation was first introduced to notice in this country, in the *Edinburgh Essays*, in the beginning of the 18th century. The formula was afterwards introduced into the Edinburgh Pharmacopœia.

Dose.—From two to five grains, in dysentery.

Apatite. A mineral consisting principally of phosphate of lime. It occurs in Cornwall, Devonshire, and abundantly in some parts of Spain. It has been imported from the latter country for the manufacture of artificial guano, or manure.

Apozem. (From απο, and ζεω, to boil.) A decoction.

Aqua. *Water.* A compound of oxygen and hydrogen, (HO.) An important agent in nature, and in many pharmaceutical operations. The natural sources from which it is usually derived, for use in medicine, domestic economy, and the arts, are, 1st, subterraneous wells; 2ndly, rivers; 3rdly, rain. The water obtained from these different sources is always contaminated with some foreign matters; distillation is the process usually resorted to for the purpose of freeing it from such impurities.

Aqua acidi carbonici. *Carbonic acid water.* The liquid sold as soda water is usually nothing more than water into which carbonic acid gas has been condensed by means of a force-pump: sometimes, even, atmospheric air is substituted for carbonic acid. The practice of introducing soda into "soda water," has, however, been more frequently adopted latterly by the manufacturers.

Aqua alexeteria. *Alexeterial water.*

Lond. Ph. 1746.

℞	Fresh spearmint leaves	℔iss.
	Fresh wormwood tops,	
	Fresh angelica leaves, each	℔j.
	Water, a sufficient quantity.	

Distil 3 gallons.

Aqua alexeteria spirituosa. *Spirituous alexeterial water.*

Lond. Ph. 1746.

℞	Fresh spearmint leaves	℔ss.
	Fresh angelica leaves,	
	Fresh sea wormwood tops, each,	℥iv.
	Proof spirit	cong. j.
	Water, a sufficient quantity.	

Distil 1 gallon.

Aqua aluminosa bateana. *Bates's alum water.*

℞	Alum,	
	White vitriol, each	℥ss.
	Water	Oij.

Boil the salts in the water till they are dissolved, and filter the solution through paper.—*Ph. Bateana* and *Lond. Ph.* 1746.

Aqua amygdalæ amaræ. *Bitter almond water.* Obtained by distilling the cake, left after the expression of the fixed oil from bitter almonds, with water. Mix ℔j. of almond cake with ℔viij. of water; let the mixture stand for 12 hours, then carefully distil with a moderate heat.

Aqua anethi. *Dill water.*

Lond. Ph. 1836.

℞	Dill, bruised	lb. iss.
	Proof spirit	f℥vij.
	Water	cong. ij.

Distil 1 gallon.

Edinb. Ph. 1841.

Anethum seeds, bruised	℥xviij.
Water	cong. ij.
Rectified spirit	f℥iij.

Mix together, and distil off one gallon.

Aqua anisi. *Aniseed water.* Made as the preceding, substituting anise for dill. It is not ordered in either of the British Pharmacopœias.

AQUA ANISI COMPOSITA. *Compound aniseed water.*

℞ Aniseeds, Angelica seeds, each	lb. ss.
Proof spirit	cong. j.
Water, a sufficient quantity.	

Distil one gallon. *Lewis's Dispensatory.*

AQUA BRYONIÆ COMPOSITA. *Compound bryony water. Hysteric water.*

℞ Bryony root	lb. j.
Wild valerian	℥iv.
Pennyroyal, Rue, each	lb.ss.
Magwort leaves, Feverfeu flowers, Savin tops, each	℥j.
Fresh orange-peel, Lovage seed, each	℥ij.
French brandy,	cong. ijss.

Macerate for four days, and distil cong. ijss.

AQUA CARUI. *Carraway water.*

Lond. Ph. 1836.

℞ Carraway, bruised	lb. jss.
Proof spirits	f℥vij.
Water	cong. ij.

Distil 1 gallon.

Dubl. Ph. 1826.

℞ Carraway seeds, bruised	lb. j.
Water, a sufficient quantity.	

Distil 1 gallon.

AQUA CASSIÆ. *Cassia water.*

Edin. Ph. 1841.

℞ Cassia bark, bruised	℥xviij.
Water	cong. ij.
Rectified spirit	f℥iij.

Mix them together, and distil off 1 gallon.

AQUA CINNAMOMI. *Cinnamon water.*

Lond. Ph. 1836.

℞ Cinnamon, bruised	lb.jss.
(Or oil of cinnamon	ʒij.)
Proof spirit	f℥vij.
Water	cong. ij.

Distil 1 gallon.

Edin. Ph. 1841.

℞ Cinnamon bark, bruised	℥xviij.
Water	cong. ij.
Rectified spirit	f℥iij.

Mix, and distil 1 gallon.

AQUA DESTILLATA. *Distilled water.*

Lond. Ph. 1836.

℞ Water cong. x. First let Oij. distil, which being thrown away, let 8 gallons distil. Keep the distilled water in a glass bottle.

Edin. Ph. 1841.

Take any convenient quantity of spring-water; distil it from a proper vessel, rejecting the first twentieth part, and preserving the first half of the remainder.

Dubl. Ph. 1826.

℞ Water lb. xx. Put it into a glass retort, and having rejected the first lb. that comes over, let 1 gallon be distilled over a moderate heat.

AQUA FLORUM AURANTII. *Orange flower water, Aqua naphæ, Eau de naphe.*

Lond. Ph. 1836.

℞	Orange flowers	lb. x.
	Proof spirit	f℥vij.
	Water	cong. ij.

Distil 1 gallon.

Aqua naphæ has been said to signify a water distilled from the orange leaf, but it is used as synonymous with orange *flower* water in the French Pharmacopœias.

AQUA FŒNICULI. *Fennel water.*

	Lond. 1836.	Edin. 1841.	Dubl. 1826.
Fennel seeds	lb. iss.	℥xviij.	lb. j.
Proof spirit	f℥vij.	—	—
Rectified spirit	—	f℥iij.	—
Water	cong. ij.	cong. ij.	q. s.
Distil	1 gallon.	1 gallon.	1 gallon.

AQUA HUNGARICA. *Hungary water.*

The following is the formula preserved in the Imperial Library at Vienna, said to be in the hand-writing of Elizabeth, Queen of Hungary, (or Langravine of Thuringia,) 1235.—

> "I, Elizabeth, Queen of Hungary, being very infirm and much troubled with the gout in the seventy-second year of my age, used for a year this receipt, given to me by an ancient hermit, whom I never saw before nor since; and was not only cured, but recovered my strength, and appeared to all so remarkably beautiful, that the King of Poland asked me in marriage, he being a widower and I a widow. I, however, refused him for the love of my Lord Jesus Christ, from one of whose angels I believe I received the remedy. The recipe is as follows:—℞ Aqua vitæ four times distilled, three parts; and of the tops and flowers of rosemary, two parts. Put these together in a close vessel, let them stand in a gentle heat fifty hours, and then distil them. Take ʒj. of this in the morning once every week, and let your face and diseased limb be washed with it every morning."

Spirit of rosemary is often sold for Hungary water, but if it be made, as is usual, from the oil of rosemary of commerce, which is seldom genuine, the product will be very inferior to that made from the fresh herb, as directed in the above recipe.

AQUA HYSSOPI. *Hyssop water.*

Distilled from the fresh leaves of hyssop. This was ordered in the Edin. Ph. 1722.

AQUA HYDRARGYRALIS SIMPLEX. *Eau mercurielle simple. Simple mercurial water.*

Soubeiran, 1840.

℞	Mercury . . .	1
	Water	2

Boil for two hours in a glass mattrass; separate the water by decantation. It was for a long time believed that the water could take nothing from the mercury; but the experiments of Wiggers have proved that a part of the metal was dissolved. To establish its presence we must add to the mercurial water a little nitric acid and concentrate. The mercury is changed into nitrate, the presence of which is detected by re-agents. I repeated this experiment, and obtained the same result as Wiggers. I rendered it more manifest by replacing the nitric acid by chlorine, keeping them in contact for twenty-four hours, adding a little sal ammoniac, and evaporating. M. Paton could not detect mercury by Wiggers process; this, however, arises from the quantity of this metal being very small, and from the sulphuret of mercury which forms in the nitric liquor frequently not separating till it is heated.

Use. Vermifuge. Its effects would probably be more certain, if we employed a bitter vegetable infusion to make the decoction.

AQUA LAURO-CERASI. *Cherry-laurel water.*

Edinb. Ph. 1841.

℞	Fresh leaves of cherry-laurel . .	lb. j.
	Water	Oijss.
	Compound spirit of lavender . .	℥j.

Chop down the leaves, mix them with the water, distil off one pint, agitate the distilled liquid well, filter it if any milkiness remain after a few seconds of rest, and then add the lavender spirit.

Dublin Ph. 1826. *Laurel water.*

℞	Fresh leaves of cherry-laurel . .	lb. j.
	Water	Oiij.

Distil a pint, and add ℥j of compound spirit of lavender.

AQUA LAVANDULÆ. *Lavender water.*

The compound sold under this name would be more correctly called spirit of lavender.

1.

℞	Fresh-picked lavender flowers . .	lb. vj.
	Rectified spirit . . .	lb. xviij.

Macerate for two days, and then distil with the heat of a water-bath.

It is generally made by adding the essential oil to spirit.

2.

℞	English oil of lavender . . .	f℥j.
	Rectified spirit . . .	f℥xv. Mix.

Other essential oils or essences are often added with the view of improving the scent.

3.

℞ English oil of lavender	f℥j.
Essence of ambergris and musk,	f℥ss.
Rectified spirit	f℥xv.

Mix.

4.

℞ English oil of lavender	f℥j.
Essence of ambergris and musk,	f℥ss.
Eau de cologne	f℥viij.
Rectified spirit	f℥xvj.

Mix.

5.

℞ English oil of lavender	℥iv.
Essence of musk	℥ij.
Oil of bergamot	ʒxss.
Oil of cloves	ʒv.
Otto of roses	ʒj.
Oil of origanum	ʒss.
Oil of rosemary	ʒss.
Rectified spirit	Ox.
Water	Oij.

Mix.

It is necessary to have pure spirit, free from smell, and the very best essential oils and essences, in order to make good lavender water.

Aqua mellis. *Honey water.*

A sweet-scented spirit distilled from some aromatic substances, together with honey, has long been sold under this name. The following is an old formula for it.

1.

℞ Coriander seeds	lb. ij.
Fresh lemon-peel	℥viij.
Bruised nutmegs	℥viij.
Orris root, sliced	℥iv.
Rectified spirit	cong. ijss.
Water	cong. iij.

Macerate for three days, and then distil 3 gallons with the heat of a water-bath. To the distilled spirit add,

Oil of lavender	℥ss.
Oil of rosemary	℥ss.
Rose water	Oiij.
Orange-flower water	Oij.
Honey	℥j.
Tincture of musk	℥j.

Tincture of saffron, sufficient to give it the proper colour.

The foregoing has been simplified and greatly improved in the following, which is a good formula.

2.

℞ Rectified spirit	Oviij.
Rose water	Oij.
Orange-flower water	Oij.
Oil of cloves	℥ss.
Oil of lavender	℥ss.
Oil of bergamot	℥ij.
Oil of yellow sandal-wood	ʒj.
Honey	℥j.
Tincture of saffron	℥j. or q. s.
Musk	gr. x.

Macerate for a week, and filter.

Aqua melissæ. *Eau de melisse des carmes, Balm water, Carmelite water.*

This celebrated spirit was first made by an order of nuns called Carmelites; but although the process was kept as secret as possible, several formulæ have been published for its preparation. The following is a good one:—

1.

℞ Dried balm leaves	℥iv.
Dried lemon-peel	℥ij.
Nutmegs, Coriander fruit, each	℥j.
Cloves, Cinnamon, Angelica root, each	℥ss.
Rectified spirit	lb. ij.
Brandy	lb ij.

Macerate for three days; distil by the heat of a water-bath; and afterwards keep the distilled product for some time in a cold cellar.

The following formula has recently been published as that employed at the *Convent du Faubourg-Saint-Germain*:—

2.

℞ Fresh balm leaves . . .	3 handfuls
Fresh lemon-peel, Nutmegs, Coriander seeds, Cloves, Cinnamon, each . . .	℥j.
Best white wine, Rectified spirit, each .	lb. ij.

Macerate for twenty-four hours, and then distil lb. ij. by the heat of a sand-bath.

Aqua menthæ piperitæ. *Peppermint water.*

Lond. Ph. 1836.

℞ Dried peppermint . .	lb. ij.
(Or fresh peppermint .	lb. iv.
Or oil of peppermint .	ʒij.)
Proof spirit . . .	f℥vij.
Water . . .	cong. ij.

Distil a gallon.

Edin. Ph. 1841.

℞ Fresh peppermint .	lb. iv.
(Or of the dried . .	lb. ij.)
Water . . .	cong. ij.
Rectified spirit . . .	f℥iij.

Distil a gallon.

Dubl. Ph. 1826.

℞ Peppermint	lb. jss.
Water, a sufficient quantity.	

Distil a gallon.

Aqua menthæ pulegii. *Pennyroyal water.*
Lond. Ph. 1836. Prepared as peppermint water.
Dubl. Ph. 1826. Prepared as peppermint water.
Not ordered in the Edin. Ph. 1841.

Aqua menthæ pulegii composita. *Pennyroyal and hysteric water.*

This is a common remedy among the lower classes in some localities.

℞ Pennyroyal water . . .	2 parts
Compound bryony or hysteric water .	1 part. Mix.

Aqua menthæ viridis. *Spearmint water, Mint water.*
Lond. Ph. 1836. Prepared as peppermint water.
Edin. Ph. 1841. Prepared as peppermint water.
Dubl. Ph. 1836. Prepared as peppermint water.

Aqua picis liquidæ. *Tar water.*

Dubl. Ph. 1826.

℞ Tar	Oij.
Water	cong. j.

Stir them together with a stick for a quarter of an hour, then, when the tar has subsided, strain the liquor and keep it in well-stopped bottles.

AQUA PIMENTÆ. *Pimenta water.*

Lond. Ph. 1836.

℞	Pimenta, bruised	lb. j.
	(Or oil of pimenta	ʒij.)
	Proof spirit	f℥vij.
	Water	cong. ij.

Distil a gallon.

Edin. Ph. 1841.

℞	Pimenta, bruised	lb. j.
	Water	cong. ij.
	Rectified spirit	f℥iij.

Mix them, and distil one gallon.

Dubl. Ph. 1826.

℞	Pimenta berries, bruised	lb. ss.
	Water, a sufficient quantity.	

Macerate for twenty-four hours, and distil a gallon.

AQUA RAPHANI COMPOSITA. *Compound horseradish water.*

Lond. Ph. 1746.

℞	Fresh garden scurvygrass leaves	lb. iv.
	Fresh horseradish root, Fresh orange-peel, each	lb. ij.
	Nutmegs	℥ix.
	Proof spirit	cong. ij.
	Water, a sufficient quantity	

Distil 2 gallons.

AQUA ROSÆ. *Rose water.*

Lond. Ph. 1836.

℞	Roses	lb. x.
	Proof spirit	f℥vij.
	Water	cong. ij.

Distil a gallon.

Edin. Ph. 1841.

℞	Petals of Rosa centifolia	lb. x.
	Water	cong. ij.
	Rectified spirit	f℥iij.

Mix them, and distil off one gallon. The petals should be preferred when fresh; but it also answers well to use those which have been preserved by beating them with twice their weight of muriate of soda.

Dubl. Ph. 1826.

℞	Petals of the hundred-leaved rose	lb. viij.
	Water, a sufficient quantity.	

Distil a gallon.

AQUA SAMBUCI. *Elder water.*

Lond. Ph. 1836.

℞	Elder flowers	lb. x.
	(Or oil of elder	ʒij.)
	Proof spirit	f℥vij.
	Water	cong. ij.

Distil a gallon.

Edin. Ph. 1841.

℞	Fresh elder flowers	lb. x.
	Water	cong. ij.
	Rectified spirit	f℥iij.

Mix them, and distil off one gallon.

Aqua tiliæ. *Lime-flower water.* (Swediaur.)

℞ Lime flowers	2 parts.
Water	q. s.

Distil 20 parts.

Aqua vulneraria. *Eau d'Arquebusade, Arquebusade water.*

This has been a celebrated application for contusions, for resolving coagulated blood or tumours, and for cleaning and healing ulcers and wounds. It was originally prepared from a great number of ingredients. Formulæ for its preparation were given in some of the old continental pharmacopœias. The following, although not an authorized formula, is more simple, and answers better than those above alluded to :—

℞ Dried mint, Dried Angelica tops, each	lb. j.
Dried wormword	lb. ss.
Angelica seeds	℥v.
Oil of juniper	ʒss.
Spirit of rosemary	Oiijss.
Rectified spirit	cong. v.
Water	cong. iv.

Mix, and distil six gallons.

Aqua zinci sulphatis cum camphora. *Aqua vitriolica camphorata. Camphorated white vitriol water.*

Lond. Ph. 1646.

℞ Sulphate of zinc	℥ss.
Camphor	ʒij.
Boiling water	lb. ij.

Mix until the sulphate of zinc is dissolved; then filter.

Archil. *Orchil.*

A coloured liquid obtained by macerating the Rocella tinctoria in an ammoniacal liquor. Urine and lime were formerly used, and probably are still, to a certain extent, in making archil. There are two kinds of archil sold, blue and red, the difference in which depends upon slight variations in the preparation. It is principally used for dyeing and staining wood.

Aquæ minerales. *Mineral waters.*

This term is applied to spring-waters which contain such mineral constituents in solution as are capable of rendering them efficient medicinal agents. Formulæ have been published for the artificial production of some of these waters, and these are called *Artificial mineral waters.* The following formulæ represent the composition of some of the natural and artificial waters of this class.

AIX-LA-CHAPELLE WATER.

Natural.

Contains,

Chloride of sodium . .	46 grs.
Carbonate of soda, dry . .	8 grs.
Sulphate of soda, dry . .	$3\frac{1}{2}$ grs.
Carbonate of lime . .	2 grs.
Carbonate of magnesia . .	$\frac{1}{2}$ gr.
Silica	$\frac{1}{4}$ gr.
Nitrogen gas .	undetermined.
Carbonic acid gas .	15 cub. in.
Sulphuretted hydrogen	10 cub. in.
Water . . .	2 pints.

Artificial.

℞ Pure water . . .	2 galls.
Carbonic acid . .	4 galls.
Sulphuretted hydrogen .	$\frac{1}{3}$ gall.
Chloride of sodium .	423 grs.
Bicarbonate of soda .	177 grs.
Sulphate of soda, cryst. .	90 grs.
Chloride of calcium .	45 grs.
Chloride of magnesium .	12 grs.

Dissolve the sulphuretted hydrogen in its own volume of the water. Dissolve the salts in the remainder of the water, and then charge the solution with the carbonic acid. Divide this latter solution in sixteen bottles; add an equal proportion of the solution of sulphuretted hydrogen to each bottle, and cork it immediately.

BALARUC WATER. *Eau de balaruc.* (Used only for baths.)

Natural.

Contains,

Carbonic acid . .	17 cub. in.
Chloride of sodium .	115 grs.
Chloride of magnesium .	20 grs.
Chloride of calcium .	15 grs.
Carbonate of lime . .	18 grs.
Carbonate of magnesia .	$1\frac{1}{2}$ grs.
Sulphate of lime . .	10 grs.
Iron	a trace.
Water	2 pints.

Artificial.

℞ Chloride of sodium .	lb. iv. ℥iij.
Chloride of calcium .	lb. iv. ℥iv.
Chloride of magnesium .	lb. ij. ℥j.
Sulphate of soda . .	lb. j. ℥iv.
Bicarbonate of soda .	lb. j. ℥viij.
Bromide of potassium .	gr. xxiij.
Water	60 galls.

Dissolve the chlorides of calcium and magnesium in part of the water, cold. Dissolve the chloride of sodium and sulphate of soda in the remainder of the water, with heat. Mix the two solutions, and add the bicarbonate of soda and bromide of potassium reduced to fine powder, when the bath will be ready for immediate use.

BOURBONNE LES BAINS. (Used only for baths.)

Natural.

Contains,

Chloride of sodium	92 grs.
Chloride of calcium	11 grs.
Sulphate of lime	11 grs.
Carbonate of lime	4 grs.
Bromide of potassium	¾ grs.
Water	2 pts.

Artificial.

℞	Chloride of sodium	lb. iv. ℥iij.
	Chloride of calcium	lb. ij. ℥viij.
	Sulphate of soda	lb. iv.
	Bicarbonate of soda	℥ivss.
	Bromide of potassium	230 grs.
	Water	60 galls.

Dissolve the chloride of calcium and bicarbonate of soda in one part of the water, cold. Dissolve the other salts in the remaining portion of the water, warm. Mix the two together, and use the bath immediately. (Guibourt.)

BAREGE WATER. *Eau de barèges.*

For drinking.

℞	Sulphuret of sodium	31 grs.
	Carbonate of soda	31 grs.
	Chloride of sodium	31 grs.
	Distilled water	2 galls.

To be put into sixteen bottles, the corks of which must be fastened down. (Codex.)

For baths.

℞	Sulphuret of sodium	986 grs.
	Carbonate of soda	986 grs.
	Chloride of sodium	986 grs.
	Distilled water	Oij.

Dissolve.

This solution is to be mixed with 60 gallons of water to form a bath. (Codex.)

The above waters may be used for those of *Cauterets, Bagneres de Luchon, Bonne,* and *Saint Sauveur.*

CARLSBAD WATER. *Eau de Carlsbad.*

Natural.

Contains,

Carbonate of soda	7·27 grs.
Carbonate of lithia	·15 gr.
Carbonate of strontia	·005 gr.
Carbonate of magnesia	1·02 grs.
Carbonate of iron	·02 grs.
Carbonate of lime	1·77 gr.
Carbonate of manganese	·004 gr.
Chloride of sodium	5·98 grs.
Silica	·43 gr.
Subphosphate of lime	·001 gr.
Subphosphate of alumina	·001 gr.
Sulphate of soda	14·901 grs.
Fluoride of calcium	·018 gr.
Water	1 pound.

Carbonic acid 58 grs. in 100 cubic inches.
Temperature 143° Fahr. (Berzelius.)

Artificial.

℞	Sulphate of soda, cryst.	669 grs.
	Carbonate of soda, do.	862 grs.
	Chloride of sodium	104 grs.
	Chloride of calcium, cryst.	103 grs.
	Sulphate of magnesia	164 grs.
	Water	2 gall.

Dissolve the salts of soda, the chloride of calcium, and the sulphate of magnesia, separately, in as much water as is required; filter the solutions; mix them; add the remainder of the water, and charge the solution with five volumes of carbonic acid. (Guibourt.)

CARRARA WATER. *Carbonated lime water.*

A patent has been taken out for an aërated water, which is made by condensing carbonic acid gas into a solution of lime in water; the carbonate of lime first formed is re-dissolved by the excess of carbonic acid. This water is used in calculous complaints.

CHELTENHAM WATER. (*Chalybeate spring.*)

Natural.

Contains,

Carbonate of soda	·5 gr.
Sulphate of soda	22·7 grs.
Sulphate of magnesia	6· grs.
Sulphate of lime	2·5 grs.
Chloride of sodium	41·3 grs.
Oxide of iron	·8 gr.
Water	1 pint.
Carbonic acid	2½ c. in.

(Brande.)

Artificial.

℞		
℞	Bicarbonate of soda	5 grs.
	Sulphate of soda, cryst.	50 grs.
	Sulphate of magnesia, cryst.	13 grs.
	Chloride of calcium	4 grs.
	Chloride of sodium	42 grs.
	Protosulphate of iron	2 grs.
	Water	1 pint.
	Carbonic acid	2½ c. in.

Dissolve the salts in the water, and charge with the carbonic acid.

CHELTENHAM WATER. (*Pure saline spring.*)

Natural.

Contains,

Sulphate of soda	15 grs.
Sulphate of magnesia	11 grs.
Sulphate of lime	4·5 grs.
Chloride of sodium	50 grs.
Water	1 pint.

(Brande.)

Artificial.

℞	Sulphate of soda, cryst.	34 grs.
	Sulphate of magnesia, do.	23 grs.
	Chloride of sodium	50 grs.
	Water	1 pint.

Dissolve.

The salts mentioned in the above formula are sometimes sold as "*Cheltenham salts.*"

CHELTENHAM WATER. (*Sulphur spring.*)

Natural.

Contains,

Sulphate of soda	23·5 grs.
Sulphate of magnesia	5· grs.
Sulphate of lime	1·2 gr.
Chloride of sodium	35· grs.
Oxide of iron	·3 gr.
Water	1 pint.
Carbonic acid	1½ c. in.
Sulphuretted hydrogen	2½ c. in.

(Brande.)

Artificial.

℞	Bicarbonate of soda	20 grs.
	Sulphate of soda, cryst.	30 grs.
	Sulphate of magnesia, do.	10 grs.
	Chloride of sodium	35 grs.
	Sulphuret of sodium	10 grs.
	Water	1 pint.

Dissolve.

CONTREXEVILLE WATER. *Eau de Contrexeville.*

Natural.

Contains,

Chloride of sodium .	0·081 gm.
Sulphate of magnesia .	0·027 gm.
Sulphate of lime . .	0·271 gm.
Carbonate of iron . .	0·027 gm.
Carbonate of lime . .	0·013 gm.
Carbonic acid, a small quantity.	
Water	1 litre.

Artificial.

℞ Chloride of sodium . .	6 grs.
Protochloride of iron, sublimed	4½ grs.
Chloride of calcium, cryst.	4½ grs.
Bicarbonate of soda . .	9 grs.
Sulphate of magnesia .	4 grs.
Sulphate of lime . .	40 grs.
Water	2 galls.
Carbonic acid . . .	4 galls.

Dissolve the salts in the water, and charge the solution with the carbonic acid. (Guibourt.)

HARROWGATE CHALYBEATE WATER.

Natural.

Contains,

Chloride of sodium .	300·4 grs.
Chloride of calcium . .	22· grs.
Chloride of magnesium .	9·9 grs.
Sulphate of lime . .	1·86 gr.
Carbonate of lime . .	6·7 grs.
Carbonate of magnesia .	·8 gr.
Oxide of iron . . .	2·4 grs.
Silica	0·4 gr.
Water	1 gall.

(Scudamore.)

Artificial.

℞ Chloride of sodium, cryst.	250 grs.
Chloride of calcium, do. .	46 grs.
Chloride of magnesium, do.	22 grs.
Sulphate of soda . .	2 grs.
Bicarbonate of soda .	45 grs.
Protochloride of iron .	8 grs.
Water	1 gal.

Dissolve the bicarbonate of soda in half the water, and the other salts in the remainder, and mix the two solutions.

HARROWGATE SULPHUR WATER.

Natural.

Contains, Chloride of sodium	735 grs.
Chloride of calcium .	71·5 grs.
Chloride of magnesium .	43 grs.
Bicarbonate of soda .	14·75 grs.
Sulphuretted hydrogen	6·4 c. in.
Carbonic acid . .	5·25 c. in.
Nitrogen gas . .	6.5 c.in.
Carburetted hydrogen .	4.65 c.in.
Water . . .	1 wi. gall.

Artificial.

℞ Chloride of sodium, cryst.	500 grs.
Chloride of calcium, cryst.	150 grs.
Chloride of mag., cryst. .	90 grs.
Bicarbonate of soda .	250 grs.
Sulphuret of sodium .	120 grs.
Water . . .	1 wine gall.

Dissolve the sulphuret of sodium in half the water, and the other salts in the remainder, then mix the two solutions.

LEAMINGTON WATER. (Sulphur.)

Natural.

Contains,

Chloride of sodium . .	15 grs.
Chloride of calcium .	7·96 grs.
Chloride of magnesium .	3·30 grs.
Sulphate of soda . .	11·60 grs.
Oxide of iron . . .	a trace.
Sulphuretted hydrogen,	undetermined
Water . . .	1 pint.

(Scudamore.)

Artificial.

℞ Chloride of sodium .	96 grs.
Chloride of calcium, cryst.	45 grs.
Chloride of mag., cryst.	34 grs.
Sulphate of soda, cryst.	13 grs.
Water	f℥xxviij.
Sulphuretted hydrog. water	f℥iv.

Dissolve the salts in the water, and add the sulphuretted hydrogen water to the solution.

MAGNESIA WATER. *Solutio Magnesiæ carbonatis.*

No. 1.

℞	Carbonate of magnesia recently precipitated,	℥iij. ʒij. ℈ij.
	Water . . .	1 gallon.
	Carbonic acid . .	187 cub. in.

No. 2.

℞	Carbonate of magnesia recently precipitated	℥vj. ʒv. ℈j.
	Water . . .	1 gallon.
	Carbonic acid . .	287 cub. in.

Diffuse the carbonate of magnesia, in its moist and recently precipitated state, through the water, and then charge it with the carbonic acid.

MONT-DORE WATER. *Eau du Mont-Dore.*

Natural.

Contains,

Bicarbon. of soda, .	7 gramm.
Chloride of sodium .	4 gramm.
Sulphate of soda, cryst.	1·5 gramm.
Carbonate of lime .	1·6 gramm.
Carbonate of magnesia	0·6 gramm.
Silica	2 gramm.
Peroxide of iron . .	0·1 gramm.
Water . . .	10 litre.
Carbonic acid .	undetermined.

Artificial.

℞	Sulphate of soda, cryst. .	17 grs.
	Chloride of sodium .	20 grs.
	Chloride of magnesium	18 grs.
	Protosulphate of iron .	5 grs.
	Bicarbonate of soda .	169 grs.
	Chloride of calcium .	54 grs.
	Water	2 galls.
	Carbonic acid. . .	10 galls.

Dissolve the salts in the water, and charge the solution with the carbonic acid.

NAPLES WATER.

Artificial.

℞	Carbonate of soda, cryst. .	24 grs.
	Carbonate of magnesia . .	13 grs.
	Water	f℥xxviij.
	Carbonic acid gas . .	5 vols.
	Sulphuretted hydrogen water .	f℥iv.

Add the carbonates of soda and magnesia to the water, and charge with the carbonic acid. Then add the sulphuretted hydrogen water, in the bottle, and cork immediately.

PASSY WETER. *Eau de Passy.*

Natural.

Contains,

Sulphate of lime . .	43·20 grs.
Protosulphate of iron .	17·24 grs.
Sulphate of magnesia .	22·60 grs.
Chloride of sodium . .	6·60 grs.
Alum	7·50 grs.
Carbonate of iron . .	0·80 gr.
Carbonic acid, .	in small quantity.
Bituminous matter .	
Water	2 lbs.

Artificial.

℞	Sulphate of lime . .	35 grs.
	Protosulphate of iron .	17 grs.
	Sulphate of magnesia .	18 grs.
	Chloride of sodium .	5 grs.
	Alum	6 grs.
	Water	2 pnts.

Dissolve.

Provins water. *Eau de Provins.*

Natural.

Contains,

Carbon. of lime,	5·54 gramm.
Carbonate of iron	1·11 gramm.
Carbonate of magnesia	0·83 gramm.
Carbonate of manganese,	0·22 gramm.
Silica	0·25 gramm.
Chloride of sodium	0·42 gramm.
Water	10 litre.
Carbonic acid	5 litre.

Artificial.

℞ Chloride of calcium	184 grs.
Sulphate of magnesia	34 grs.

Dissolve in a sufficient quantity of water, and add solution of carbonate of soda as long as any precipitate is formed. Collect and wash the precipitate, to which add—

Bicarbonate of soda	30 grs.
Protochloride of iron	18 grs.
Protochloride of manganese	6 grs.
Water	2 galls.

Charge the solution with 5 volumes of carbonic acid gas.

Pullna water. *Eau de Pullna.*

Natural.

Contains,

Sulphate of magnesia	33·55 gramm.
Sulphate of soda	21·88 gramm.
Chloride of sodium	3 gramm.
Chloride of magnesium	1·86 gramm.
Sulphate of lime	1·18 gramm.
Carbonate of magnesia	0·54 gramm.
Carbonate of lime	0·01 gramm.
Carbonate of iron	0·001 gramm.
Organic matter	0·40 gramm.
Water	1 litre.

Artificial.

℞ Sulphate of soda, cryst.	3717 grs.
Sulphate of magnesia	5168 grs.
Chloride of magnesium	723 grs.
Chloride of calcium	231 grs.
Chloride of sodium	231 grs.
Bicarbonate of soda	150 grs.
Water	2 galls.
Carbonic acid	10 galls.

Dissolve the salts in the water, and charge the solution with the carbonic acid. (Guibourt.)

Pyrmont water. *Eau de Pyrmont.*

Natural.

Contains,

Carbonate of lime	4·77 grs.
Protocarbon. of manganese	·03 gr.
Protocarbonate of iron	·32 gr.
Subphosphate of alumina	·01 gr.
Sulphate of potassa	·03 gr.
Sulphate of soda	1·60 gr.
Sulphate of lithia	.006 gr.
Sulphate of lime	5·02 grs.
Sulphate of strontia	·01 gr.
Sulphate of magnesia	2·36 grs.
Chloride of magnesium	·84 gr.
Silica	·37 gr.
Water	1 lb.
Carbonic acid	1½ vol.

(Struve.)

Artificial.

℞ Carbonate of lime	12 grs.
Carbonate of soda, cryst.	31 grs.
Sulphate of soda, cryst.	7¼ grs.
Sulphate of lime	14 grs.
Sulphate of magnesia	20 grs.
Sulphate of iron	2 grs.
Chloride of sodium	2 grs.
Chloride of magnesium	4 grs.
Chloride of manganese	$\frac{1}{27}$ gr.
Water	2 pnts.
Carbonic acid	5 vols.

Dissolve the sulphate of iron in part of the water. Dissolve the other soluble salts in the remainder of the water. Add the insoluble salts to the solution, and charge it with the carbonic acid. Then mix the two solutions in a bottle and cork it immediately. (Soubeiran.)

SEA WATER. Artificial.

No. 1.

℞ Chloride of sodium	409 grs.
Chloride of magnesium, dry	79 grs.
Chloride of calcium, dry	19 grs.
Sulphate of soda, dry	71 grs.
Water	lbij.℥viij.

Dissolve. (Guibourt.)

No. 2.

℞ Bay salt	409 grs.
Sulphate of soda, cryst.	180 grs.
Chloride of calcium, cryst.	37 grs.
Chloride of magnesium, cryst.	151 grs.
Water	f℥xxxv.

Dissolve. (Soubeiran.)

SEIDCHUTZ WATER.

Natural.

Contains, Carbonate of lime	5.10 grs.
Carbonate of magnesia	.82 gr.
Protocarbonate of manganese	.003 gr.
Protocarbonate of iron	.009 gr.
Subphosphate of lime	.01 gr.
Subphosphate of alumina	.008 gr.
Sulphate of potassa	3.67 grs.
Sulphate of soda	17.62 grs.
Sulphate of lime	1.12 gr.
Sulphate of strontia	.03 gr.
Sulphate of magnesia	62.35 grs.
Nitrate of magnesia	5. 93 grs.
Chloride of magnesium	1.22 gr.
Silica	.09 gr.
Water	1 pound.
Carbonic acid gas	1-fifth volume.

(Struve.)

Artificial.

℞ Sulphate of magnesia	320 grs.
Chloride of calcium, cryst.	9 grs.
Sulphate of lime	14 grs.
Carbonate of lime	21 grs.
Carbonate of magnesia	45 grs.
Water	f℥xxxv.
Carbonic acid	5 volumes.

Mix the salts with the water, and charge it with the carbonic acid.

SEIDLITZ WATER. *Eau de Sedletz.*

Natural.

Contains,	Grammes.
Sulphate of magnesia	10.36
Chloride of magnesium	.13
Carbonate of magnesia	.02
Sulphate of soda	2.27
Sulphate of potash	.57
Sulphate of lime	.53
Carbonate of lime	.70
Carbonate of strontian	.008
Carbonate of iron	.007
Carbonate of manganese	
Alumina	
Silica	
Water	1 litre.
Carbonic acid.	

Artificial.

No. 1.

℞ Sulphate of magnesia	123 grs.
Water	f℥xxxv.
Carbonic acid	3 volumes.

Dissolve the salt in the water, and charge the solution with the carbonic acid.

No. 2.

℞ Sulphate of magnesia	246 grains.
Water	f℥xxxv.
Carbonic acid	3 volumes.

Mix as above.

No. 3.

℞ Sulphate of magnesia	369 grains.
Water	f℥xxxv.
Carbonic acid	3 volumes.

Mix as above.

SELTZER WATER. *Eau de Seltz.*

Natural.

Contains,

Carbonate of soda	4.61 grs.
Carbonate of baryta	.001 gr.
Carbonate of strontia	.01 gr.
Carbonate of lime	1.40 gr.
Carbonate of magnesia	1.50 gr.
Subphosphate of lime	.0007 gr.
Subphosphate of alumina	.002 gr.
Sulphate of potassa	.29 gr.
Chloride of potassium	.26 gr.
Chloride of sodium	12.96 grs.
Fluoride of calcium	.001 gr.
Silica	.22 gr.
Water	1 pound.
Carbonic acid	1¼ volume.

(Struve.)

Artificial.

No. 1.

℞ Chloride of calcium, cryst.	134 grs.
Chloride of magnesium, do.	216 grs.
Bicarbonate of soda	350 grs.
Chloride of sodium	190 grs.
Water	2 gallons.
Carbonic acid	5 volumes.

Dissolve the salts in the water, and charge the solution with the carbonic acid. (Guibourt.)

No. 2.

℞ Chloride of calcium, cryst.	7 grs.
Chloride of magnesium, cr.	6½ grs.
Carbonate of soda, cryst.	19 grs.
Chloride of sodium	24 grs.
Sulphate of iron	¼ gr.
Sulphate of soda	1 gr.
Phosphate of soda	16 grs.
Water	f℥xxxv.
Carbonic acid	5 volumes.

Mix as above.

SODA WATER.

The aërated water sold under this name, is usually either a solution of bicarbonate of soda, with excess of carbonic acid, or merely water into which carbonic acid gas has been condensed. The latter is sometimes distinguished as *Single soda water*, and the former as *Double soda water*. Some of the cheap "Soda water" met with in commerce, contains neither soda nor carbonic acid, being made by condensing atmospheric air into common water, by means of a forcing pump.

SPA WATER. (*Pouhon.*)

Natural.

Contains,

Carbonate of soda	.55 gr.
Carbonate of lime	.73 gr.
Carbonate of magnesia	.84 gr.
Protocarbonate of manganese	.03 gr.
Protocarbonate of iron	.28 gr.
Subphosphate of lime	.01 gr.
Subphosphate of alumina	.006 gr.
Sulphate of potassa	.05 gr.
Sulphate of soda	.02 gr.
Chloride of sodium	.33 gr.
Silica	.37 gr.
Water	1 pound.
Carbonic acid	1⅓ volume

(Struve.)

Artificial.

No. 1.

℞ Chloride of calcium, cryst.	26½ grs.
Sulphate of magnesia	14 grs.
Protochloride of iron	15½ grs.
Bicarbonate of soda	45 grs.
Water	2 gallons.
Carbonic acid	5 volumes.

Decompose the chloride of calcium and sulphate of magnesia, separately, with carbonate of soda; collect and wash the precipitates, which add to the bicarbonate of soda and protochloride of iron dissolved in the water, and charge the solution with the carbonic acid.

SPA WATER.

No. 2.

℞	Carbonate of soda, cryst.	6 grs.
	Carbonate of lime .	½ gr.
	Carbonate of magnesia	¼ gr.
	Protochloride of iron .	1 gr.
	Alum . . .	⅛ gr.
	Water . . .	f℥xxxv.
	Carbonic acid . .	5 volumes.

Mix the salts with the water, and charge with the carbonic acid. (Codex.)

VICHY WATER. *Eau de Vichey.*

Natural.

Contains,	Grammes.
Carbonate of soda, dry .	. 38.13
Sulphate of soda, do. .	. 2.79
Chloride of sodium, do.	. 5.58
Carbonate of lime .	. 2.86
Carbonate of magnesia .	. .45
Peroxide of iron . .	. .06
Silica	. .45
Water	10 litre.
Carbonic acid . .	11.49 litre.

Artificial.

℞	Bicarbonate of soda .	1018 grs.
	Sulphate of soda, cryst.	70 grs.
	Chloride of sodium .	35 grs.
	Chloride of calcium .	95 grs.
	Sulphate of magnesia	15 grs.
	Protosulphate of iron .	3 grs.
	Water . . .	2 gallons
	Carbonic acid . .	5 volumes.

Dissolve the salts in the water, and charge the solution with the carbonic acid.

ARGENTUM. *Silver. Symb.* Ag. *Equiv.* 108.

This substance is found in the mineral kingdom in various states; sometimes nearly pure; or alloyed with other metals. The processes followed for the extraction of silver vary in different places, according to the nature of the ore—they are principally *amalgamation* and *cupellation.*

Silver is totally dissolved by diluted nitric acid. This solution, on the addition of chloride of sodium, throws down a precipitate, which an excess of ammonia dissolves, and it should be free from colour. The chloride of silver being removed, and hydrosulphuric acid being added to the solution, it is not coloured by it, and nothing is thrown down. The specific gravity of silver is 10.4.—Lond. Ph.

Soluble entirely in diluted nitric acid: this solution, treated with an excess of muriate of soda, gives a white precipitate entirely soluble in aqua ammoniæ, and a fluid which is not affected by sulphuretted hydrogen. Edin. Ph.

ARGENTI CHLORIDUM. *Chloride of silver.*

This is obtained by precipitating a solution of nitrate of silver by pure hydrochloric acid, and washing the precipitate. Chloride of silver is perfectly insoluble in water. Dr. Perri, an American physician, has administered it in epilepsy in doses of one grain, four or five times a day; its effects, he says, are similar to those of the nitrate, but more marked. In chronic dysentery also it has been found, in smaller doses, to diminish the frequency of the stools.

ARGENTI CYANIDUM. *Cyanide of silver. Syn. Hydrocyanate, Cyanuret,* or *Cyanodide of silver.*

Lond. Ph. 1836.

℞ Nitrate of silver . .	℥ij. and ʒij.
Diluted hydrocyanic acid,	
Distilled water, each . .	O i.

Dissolve the nitrate of silver in the water, and add to them the diluted hydrocyanic acid, and mix. Wash what is precipitated with distilled water, and dry it.

By heat it yields cyanogen, and is reduced to silver.

Use.—For preparing the dilute hydrocyanic acid.

ARGENTI NITRAS. *Nitrate of silver. Equiv.* 170. *Symb.* AgO, NO^5.

Lond. Ph. 1836.

℞ Silver	℥iss.
Nitric acid	f℥i.
Distilled water . . .	f℥ij.

Mix the nitric acid with the water, and dissolve the silver in them in a sand-bath. Then gradually augment the heat, that the nitrate of silver may be dried. Dissolve this in a crucible over a slow fire, until, the water having been driven off, the boiling shall have ceased; then pour it immediately into proper moulds.

Note. At first it is white, but soon becomes black on the admission of light. It is all soluble in water. If copper be put into the solution, the silver is precipitated; the other properties the same as those given under head, SILVER.

Edin. Ph. 1841.

℞ Pure silver	℥jss.
Pure nitric acid . . .	f℥j.
Distilled water . . .	f℥ij.

Mix the acid and water, add the silver, and dissolve it with the aid of a gentle heat; increase the heat gradually till a dry salt be obtained; fuse the salt in an earthen-ware or porcelain crucible, and pour the fused matter into iron moulds previously heated and greased slightly with tallow. Preserve the product in glass vessels.

Soluble in distilled water, with the exception of a very scanty black powder: twenty-nine grains dissolved in one fluid ounce of distilled water, acidulated with nitric acid, precipitated with a solution of nine grains of muriate of ammonia, briskly agitated for a few seconds, and then allowed to rest a little, will yield a clear supernatant liquid, which still precipitates with more of the tests.

Dubl. Ph. 1826. (The D. Coll. orders the preparation of two forms of nitrate of silver; the one in crystals, the other fused.)

Crystals of Nitrate of silver.

℞ Silver laminated and cut into small fragments	37 parts.
Diluted nitric acid . . .	60 parts.

Let the silver be put into a glass vessel, and let the acid, previously diluted with water, be poured on it. Dissolve the metal with a heat gradually increased; then by evaporation and refrigeration let crystals be formed, to be dried without heat and to be preserved in a glass vessel placed in darkness.

Fused Nitrate of silver.

Let silver be dissolved in diluted nitric acid, as above described; then let the liquor be evaporated to dryness. Let the remaining mass, passed into a crucible, be liquefied by a slow heat. Let it then be poured out into proper moulds, and preserved in a glass vessel.

Med. Use.—Internally, tonic and antispasmodic in epilepsy. Dose ⅛th of a grain, gradually increased to one grain. When long taken, it is often deposited in the rete mucosum; so as to give a permanent dark hue to the patient. *Externally,* it is a most powerful escharotic.

ARGENTI MURIATICO-AMMONIATI LIQUOR. *Hydrochlorate of silver and of ammonia.* (Niemann.)

℞ Fused nitrate of silver . gr. x.
Distilled water . . . ℥ij.

Filter the solution, and pour gradually into it a solution of chloride of sodium, till no more precipitate is formed. Wash this well, and dissolve it in

Solution of ammonia . . ℥jss.
Add
Hydrochloric acid . . ʒiij.

The quantity of solution should be made up, by the addition of water, to ℥jiss.

Use.—In Epilepsy. Dose, 10 drops.

ARGENTI OXYDUM. *Oxide of silver.*

This is obtained by adding a dilute solution of potassa to solution of nitrate of silver, and washing the precipitate. Its colour is greyish brown.

A pure oxide of silver may be obtained as follows:—

To a hot solution of nitrate of silver add a hot solution of chloride of sodium as long as any precipitate is thrown down. Collect the precipitate and wash it with hot water.

During the washing it should be broken down with a spatula of platinum, or a glass rod. The chloride, *still moist,* is covered to about half an inch with a solution of caustic potash, sp. gr. 1.25 at least, and then boiled in a clean iron, silver, or platinum capsule. During the boiling the chloride is to be well stirred, so as to bruise all the lumpy particles. If a small portion, taken out and washed, do not dissolve without residue in dilute nitric acid, the potash is to be decanted off, and the powder, still moist, is to be well rubbed down in a mortar, then returned to the capsule, and again boiled for five minutes with the same or fresh potash. It will now dissolve entirely in nitric acid; if not, a second grinding will complete the process: it is now to be washed. The oxide thus prepared is black.—*Dr. W. Gregory, in Pharm. Journ.* vol. ii. p. 724.

Med. Use.—It has been given internally in the dose of *half a grain* in epileptic and gastralgic affections. Externally in the form of ointment, consisting of ten grains of oxide to a drachm of lard, it has been applied to venereal sores, and to the urethral membrane by means of a bougie, in gonorrhœa.

ARGOL. *Crude tartar. Tartarus albus. Tartarus ruber. White or red tartar.*

Impure bitartrate of potash, which is deposited on the sides of the casks during the fermentation of wine. *White argol* is obtained from white wines, and *red argol* from red wines.

ARRACK, (African.)

A spirituous liquor, made from the berries of the *Grewia flava.*

ARRACK, (China.)

A spirituous liquor, made from the toddy of *Borassus gomutus*, rice, and millet.

ARRACK, (Indian.)

Made from cocoa-nut toddy and rice. The Batavian (*Kneip*) is esteemed the best; then the Madras: the Goa and Columbo are inferior.

ARRACK, (Common Pariah.)

Made from any kind of toddy or jaggery, rendered more intoxicating by adding hemp leaves, the juice of stramonium, and poppy heads.

ARRACK, (Mock). *Mock arrack. Vauxhall nectar.*

℞	Rum	Oij..	
	Benzoic acid . . .	gr. xx.	Mix.

ARSENICUM. *Arsenic. Symb.* As. *Equiv.* 38. or 75.34.

This is a grey brittle metal. Sp. gr. 5.884. It combines in two different proportions with oxygen, forming *arsenious acid*, employed in the preparation of the liquor potassæ arsenitis, and *arsenic acid.* It is entirely sublimed by heat.

ARSENICUM FLAVUM. *Yellow arsenic. Yellow sulphuret of arsenic. Sesquisulphuret of arsenic. King's yellow. Orpiment.*

This is found native; it may also be prepared artificially. It consists of 38 parts arsenicum and 24 parts sulphur. It is used by pyrotechnists, and as a pigment.

ARSENICUM RUBRUM, *Red arsenic. Red sulphuret of arsenic, Realgar. Protosulphuret of arsenic.*

This substance occurs native; yet the commercial realgar is prepared artificially. It is met with in the form of red vitreous masses, or as a red powder. It consists of 38 parts arsenicum and 16 parts sulphur. It is poisonous;—used as a pigment.

ARSENICUM CUM ANTIMONIO. *Arsenic with antimony.*

Med. Chir. Ph.

℞	Sesquisulphuret of antimony . .	℥ij.
	Arsenious acid . . .	℥j.

To be fluxed together in a crucible, and afterwards reduced to a fine powder.

Use.—This, called the *arsenical caustic*, has been used in cases of open cancer. It is found to destroy excrescences, and to remove parts which obstruct the healing of ill-conditioned ulcers. Opium may be added to modify its severity.

ASBESTOS. *Asbestus.*

A mineral substance of a fibrous structure. There are five varieties:—1. *Amianthus*, which occurs in very long, flexible fibres, of a white, greenish, or reddish colour. 2. *Common asbestos.* Scarcely flexible, and much denser than the former. Found in the Isle of Anglesea, and in Cornwall. 3. *Mountain leather.* The fibres are interwoven so as to become tough. Found in Lanarkshire. 4. *Mountain cork*, or *Elastic asbestos.* It has a similar structure to the preceding. 5. *Mountain wood*, or *Ligniform asbestos.* Massive, of a brown colour, and having the aspect of wood.

ASAFŒTIDA. *Teufelsdreck*, or *Stercus diaboli; Devil's dung. Cibus deorum; Food of the gods.*

A gum-resin obtained from the roots of Ferula asafœtida, and other species of this genus. It has an acrid, bitter taste, and a strong alliacious smell. Although these properties render it exceedingly offensive to many persons, yet among the Asiatics it is frequently used as a condiment for flavouring their sauces and food, and is even eaten alone. It is the produce principally of Persia, and is brought to this country by way of Bombay. Two kinds of asafœtida are met with in commerce, one in lumps, which is more or less mixed with impurities, the other in tears. The fresh cut surface of asafœtida is at first milk white, or nearly so, but it soon acquires a peach-blossom colour from the action of the air; this colour, however, changes, from further exposure, to a yellowish brown. These changes of colour are more marked in the lump asafœtida, than in that which occurs in tears.

ASPHALTUM. *Bitumen judaicum. Jews' pitch.*

A hard, brittle, black or brown substance, which melts easily with heat and burns, sometimes without leaving any ashes. It is found in a soft state on the surface of the Dead Sea, and becomes hard from long exposure to the air. It is found also in the earth in different parts of the world, in China, Trinidad, and in some parts of Europe. It was formerly employed in medicine, but is now chiefly used for making varnishes and cements.

AURUM. *Gold. Symb.* Au. *Equiv.* 200.

Is found only in the metallic state; commonly alloyed with other metals, as with silver, copper, tellurium, and iron. It occurs in veins in primitive rocks, and is also found in alluvial deposits, in small lumps or particles, called gold-dust.

AURUM DIVISUM. *Divided gold. Powdered gold.*

Triturate gold leaf with ten or twelve times its weight of sulphate of potash, until no shining particles are any longer perceptible; pass the powder through a fine sieve, and then treat it with boiling water, so as to dissolve the sulphate of potash, when the finely divided gold will remain.

Or it may be done as follows:—

Make an amalgam of 1 part of gold leaf, and six parts of quicksilver, by rubbing these together in a mortar; then dissolve out the quicksilver with hot nitric acid, and wash, dry, and pulverise the gold which will remain.

AURUM STANNO PARATUM. *Gold prepared with tin. Purple of Cassius.*

Codex, 1837.

℞	Perchloride of gold . .	10
	Distilled water . . .	2000

Dissolve the chloride of gold in the water; take, on the other hand,

Pure tin	10
Nitric acid	10
Hydrochloric acid . .	20
Distilled water . . .	1000

Dissolve the tin without heat in the mixture of the two acids, and dilute the solution with distilled water.

Then pour the solution of tin into that of gold in small portions, until a precipitate no longer takes place; allow a deposit to take place, and wash by decantation; filter and dry the purple precipitate at a very gentle temperature.

AURI IODIDUM. *Iodide of gold.*

Codex, 1837.

℞	Chloride of gold . . .	100 parts.
	Iodide of potassium . . .	q. s.

Dissolve the two salts in water separately; pour gradually the solution of iodide of potassium into that of the chloride of gold, until a precipitate is no longer formed. Wash the precipitate with spirit, and dry it; it should be of a greenish yellow colour.

Med. Use. — Internally, in venereal affections; dose $\frac{1}{15}$th to $\frac{1}{10}$th of a grain. Externally, in the form of ointment to venereal ulcers.

AURI MURIAS. *Muriate of gold. Acid chloride of gold. Yellow chloride of gold.*

This is a combination of perchloride of gold with hydrochloric acid. The solution assumes a deep yellow colour, from which the acid chloride of gold crystallizes in long yellow needles. The following formula for the preparation of this salt is taken from the Journal de Pharmacie, July 1, 1844;—

Take *aqua regia*, formed of three parts of hydrochloric acid, one part of nitric acid, and one part of distilled water. Put one part of pure gold into a porcelain capsule, and pour over it *aqua regia*, prepared as above; the quantity of acid being double that of the gold employed. Cover the capsule with a plate of glass, and place it on a water-bath, made with a saturated solution of salt; continue the application of heat, taking care to keep the capsule always covered, until the evolution of nitrous vapours has ceased. If the whole of the gold is not dissolved, add a little more *aqua regia*, cover the capsule again as before, and continue the application of heat until the vapours no longer appear. The plate of glass should now be raised, and kept up by a piece of folded blotting paper, and evaporation continued over the water-bath, until, on introducing a glass rod into the capsule, and withdrawing it, the chloride of gold, which adheres, on cooling, becomes solid. Remove now the capsule from the water-bath, and the chloride will soon crystallize in small prismatic needles, of a fine yellow colour, approaching to orange. The chloride thus obtained is entirely soluble in water, and without reduction. It is employed with much success in fixing the daguerreotype images, and for many other purposes.

AURI TERCHLORIDUM. *Terchloride of gold.* ($Au\,Cl^3$.) or *Sesquichloride of gold.* ($Au^2\,Cl^3$).

Codex. 1837.

℞	Gold in laminæ . . .	10 parts.
	Nitric acid . . .	10 parts.
	Hydrochloric acid . .	20 parts.

Dissolve the gold in the mixture of the two acids, conducting the process in a glass or porcelain capsule; apply gentle heat so as to favour the solution; evaporate the liquor, until vapours of chlorine begin to be evolved; allow crystals to form, and promptly enclose them in a well-stoppered bottle.

Chloride of gold is in the form of small crystalline needles of an orange-red colour, inodorous, and having a strong styptic, disagreeable taste. It is deliquescent; soluble in water, alcohol, and ether.

Med. Use.—It acts analogously to bichloride of mercury; has been used with varying degrees of success in secondary syphilis, scrofula, chronic skin diseases, etc. Dose about $\frac{1}{20}$th of a grain—it is a powerful poison; the antidote the same as for bichloride of mercury.

AURI TERCYANIDUM. *Tercyanide of gold.*

Codex. 1837.

℞	Gold	1 part.
	Aqua regia	6 parts.
	Cyanuret of potassium, pure and in solution	2 parts.
	Distilled water	24 parts, or q. s.

First dissolve the gold in the aqua regia; evaporate the solution to dryness; take up the residue with 8 parts of distilled water; filter; heat the solution by a water-bath; and when it is reduced about a fourth, add gradually one fourth of the solution of the cyanuret; continue the evaporation nearly to dryness; again add distilled water 24 parts; let it rest for some time, and separate the cyanuret of gold produced by decanting off the liquor. The mother-liquor is again and again to be treated in a similar manner, adding a fresh portion of the cyanuret of potassium each time, as long as any cyanide of gold is deposited.

The tercyanide of gold is a powder of a canary yellow colour, without odour and without taste, and not soluble in water. By the action of heat it is changed into cyanogen and pure gold.

Note.—It is of great importance to the success of the operation that the cyanuret of potassium should be pure.

Med. Use.—In venereal and scrofulous affections, both externally and internally. *Dose* from $\frac{1}{15}$th to $\frac{1}{10}$th of a grain, made into a pill.

AURI TEROXIDUM. *Teroxide of gold.* $Au O^3$. Sometimes called *Peroxide of gold. Auric acid.*

℞ Terchloride of gold . . .	10 parts,
Calcined magnesia . . .	40 parts,
Pure nitric acid . . .	q. s.

Dissolve the perchloride of gold in about 400 parts of water; add magnesia, and boil the mixture for some minutes; wash the product with distilled water until the washings no longer throw down a precipitate with nitrate of silver. Wash it then with nitric acid diluted with about 20 parts of water, conducting the operation cold; then wash the residue, first with distilled water acidified with nitric acid, then with pure distilled water, until the washings no longer throw down a precipitate either by nitrate of silver or the subphosphate of soda. The insoluble product will be the hydrated peroxide of gold. It must be collected on a filter, and dried in the shade, in the open air.

Note.—It is indispensably necessary to the success of this operation to employ nitric acid perfectly free from hydrochloric acid.

Med. Uses.—Internally, in venereal and scrofulous diseases, in doses of from $\frac{1}{10}$th of a grain to a grain, made into pills with extract of mezereon.

AURI ET SODII CHLORIDUM. *Chloride of gold and sodium.* Cod. Par. 1837.

℞ Terchloride of gold . .	85 parts.
Chloride of sodium . .	16 parts.

Dissolve the two chlorides in a small quantity of distilled water; concentrate the solution at a gentle heat to a pellicle. By cooling, the chloride of gold and of sodium will crystallize in prisms with four planes, of an orange yellow colour.

The chloride of gold and of sodium, though less deliquescent than the terchloride of gold, must be kept in a well stoppered bottle.

AURUM MUSIVUM. *Mosaic gold. Bisulphuret of tin.* $Sn S^2$. Lond. Ph. 1746.

℞ Tin	lbj.
Flowers of sulphur . . .	℥vij.
Sal ammoniac,	
Purified quicksilver, āā. . .	lbss.

To the tin when melted add the quicksilver; when the mixture has cooled, let it be reduced to powder, well mixed with the sulphur and sal ammoniac, and let sublimation be made in a mattrass: mosaic gold will be found beneath the sublimed mass with some dross at the bottom.

This is a bisulphuret of tin. When well made it is in very soft golden flakes, very friable, and adhering to the fingers. It is insoluble in the acids, except in the nitro-hydrochloric acid. It is much used for ornamental work, under the name of *bronze-powder*, especially by the manufacturers of paper-hangings.

AXUNGIA OXYGENATA. *Oxygenated axunge.*

Ph. Bat. 1805.

℞	Depurated hog's lard	16 parts,
	Nitric acid	1 part.

Let the acid be added to the axunge melted over a slow fire, and after constant stirring with a glass rod, let it be kept liquid by means of a gentle heat for so long a time, that it no longer reddens blue litmus paper.

It should be extremely white, having been freed from all adhering acid; it is to be kept in a well-stopped vessel, and in a dark place.

BALNEUM ACIDUM. *Acid bath.*

℞	Hydrochloric acid, of commerce	lbij. ℥viij.
	Water	66 gallons.

This is the largest proportion of acid used. One-half, one-third, or one-fourth, the above quantity of acid, is more frequently prescribed.

BALNEUM ACIDI CARBONICI. *Carbonic acid bath.*

Carbonic acid gas, applied to the body, or any part of it, by a suitable apparatus.

BALNEUM ACIDI NITRO-MURIATICI. *Nitro-muriatic acid bath.*

Lendrick, of Dublin.

℞	Nitric acid, of commerce	lbj.
	Hydrochloric acid, do.	lbjss.
	Warm water	40 gallons.

Mix for a bath, in which the patient is to be immersed for 15 or 20 minutes.

Dr. Scott, of Bombay.

℞	Nitro-muriatic acid	f℥ivss. or f℥vj.
	Water	3 gallons.

Mix for a bath, in a wooden tub. The feet of the patient are to be immersed in this for 20 or 30 minutes; it may also be applied to other parts of the body with a sponge. In cold weather the water should be warm. It produces a tingling sensation on the surface of the skin, and a peculiar taste in the mouth. The application should be continued daily for two or three weeks. It has been strongly recommended for relieving the pains on the passing of gall-stones.

BALNEUM ALKALINUM. *Alkaline bath.*

℞	Carbonate of soda, crystallized	lbss., or lbj.
	Water	66 gallons.

Mix for a bath.

BALNEUM ANIMALE. *Animal bath.*

Applied, by wrapping any part of an animal, just killed, round the body, or a limb. Formerly much esteemed.

BALNEUM ANTIMONIALE. *Antimonial bath.*

℞ Potassio-tartrate of antimony	℥j. or ℥ij.
Water	66 gallons.

Mix for a bath. Applied in lumbago, and some diseases of the skin.

BALNEUM ANTIPSORICUM. *Antipsoric bath.*

Jadelot.

℞ Sulphuret of potassium, dry	℥iv.
Water	60 gallons.

Mix for a bath. Applied in cases of itch, and other cutaneous affections.

BALNEUM ANTISYPHILITICUM. *Antisyphilitic bath. Mercurial bath.*

℞ Bichloride of mercury	ʒij. to ℥j.
Water	60 gallons.

Mix for a bath. Applied in syphilitic cases, where mercury is rejected by the stomach.

BALNEUM ARENÆ. *A sand bath.*

Used as a means of applying heat through the medium of sand, in chemical operations.

BALNEUM AROMATICUM. *Aromatic herb bath.*

℞ Dried tops of Hyssop.
" Wormwood.
" Rosemary.
" Sage, āā ℥ivss.
Dried tops of Peppermint.
" Origanum.
" Thyme.
" Lavender, āā ℥ivss.

Water Oxij. Boil, strain, and add sufficient water for a bath. Applied in cases of diarrhœa, chronic rheumatism, &c.

BALNEUM ASTRINGENS. *Astringent bath. Alum bath.*

Most.

℞ Alum	℥vjss.
Water	6 or 8 pailfuls.
Whey	1 pailful.

Mix for a bath.

BALNEUM CALIDUM. *The hot-bath.*

A bath of hot water, at a temperature from 98° to 112° Fahr.

BALNEUM CHLORINII. *Chlorine bath.*

Wallace.

Chlorine gas, applied to the body, or any part of it, by a suitable apparatus. It should be at a temperature from 104° to 150° Fah. The greatest possible care is necessary in applying the bath, to prevent any of the gas from being inhaled. It has been recommended in chronic affections of the liver.

Balneum conii. *Hemlock bath.*

℞ Dried hemlock herb	4 or 5 handfuls.
Water	1 gallon.

Infuse for eight hours and strain. The part affected is to be immersed in this infusion at a temperature between 90° and 95° Fah. It is recommended in some diseases of the skin.

Balneum frigidum. *The cold bath.* A bath of cold water.

Balneum ferri iodidi. *Iodide of iron bath.*

Pierquin.

℞ Iodide of iron	℥ss. to ℥ij.
Water	sufficient for a bath.

Applied in cases of amenorrhœa, &c.

Balneum furfuris. *Bran bath.*

℞ Bran	lbiv.
Water	2 gallons.

Boil, strain, and add sufficient water, at 90° Fah., to form a bath.

Balneum gelatinosum. *Gelatinous bath.*

℞ Gelatine	lbij.
Water	1 gallon.

Dissolve and add to a warm bath.

Balneum gelatino-sulphurosum. *Gelatino-sulphurous bath.*

Dupuytren.

℞ Sulphuret of potassium	℥iv
Gelatine, or Flanders glue	lbij.

Dissolve the salt and the glue separately, in hot water, mix the solutions, and add a sufficient quantity of warm water to form a bath.

Balneum ioduretum. *Iodine bath.*

Lugol. For adults.

	No. 1.	No. 2.	No. 3.
℞ Iodide of potassium	231	308	370 grains.
Iodine	123	154	184 „
Water	f℥xx.	f℥xx.	f℥xx.

Dissolve, and add to a bath of 60 gallons.

For children.

	No. 1.	No. 2.	No. 3.
℞ Iodide of potassium	77	92	107 grains.
Iodine	38	46	61 „
Water	f℥x.	f℥x.	f℥x.

Dissolve, and add to a bath of 60 gallons.

Applied in scrofulous affections.

Balneum mariæ.
Balneum maris. } *A warm-water bath.*

Balneum marinæ. *A sea-water bath.*

The term *warm-water bath*, or water bath, is used in pharmacy, to designate an apparatus by which the heat of boiling water is applied, in conducting chemical operations. The term *warm-water bath*, or *warm bath*, is used in medicine to designate a bath of warm water, at a temperature from 92° to 98° Fah. A *sea-water bath*, is a bath of sea-water, for the artificial preparation of which, see page 665.

Balneum salino-gelatinosum. *Bain de plombieres. Saline gelatinous bath.*

℞ Bay salt	℥xvj.	
Warm water	℥lxiv.	Dissolve.

℞ Flanders glue	℥xxxij.	
Warm water	Ov.	Dissolve.

Mix the two solutions, and add them to 60 gallons of water, for a bath.

Applied in scrofulous complaints.

Balneum saponis. *Soap bath.*

Of the Hospitals of Paris.

℞ White soap	℥xxxij.
Water	Ov.

Dissolve with the aid of heat, and add 60 gallons of water, to form a bath.

Balneum sulphuretum. *Sulphuretted bath.*

℞ Sulphuret of potassium	℥iv.
Water	Oj.

Dissolve and filter. Add water sufficient to make a bath of 60 gallons. f℥j. of diluted sulphuric acid is sometimes added to decompose the sulphuret of potassium. This bath is applied in lepra, scabies, and other forms of skin diseases. For children half the above quantity of sulphuret of potassium is used.

Balneum sulphurosum. *Sulphurous acid bath.*

Sulphurous acid gas, obtained by burning sulphur, and applied to the body, or any part of it, by a suitable apparatus, care being taken not to inhale any of the gas.

Balneum tepidum. *The tepid bath.*

A warm-water bath at a temperature from 85° to 92° Fah.

Balneum vaporis. *The vapour bath.*

The vapour of hot water applied to the body, or any part of it, by a suitable apparatus. The *tepid vapour-bath* has a temperature from 96° to 106° Fah.; the *warm vapour-bath*, from 106° to 120°: the *hot vapour-bath*, from 120° to 160°.

BALSAMUM ACETICUM CAMPHORATUM.

Pelletier.

℞ White curd soap	
Camphor, āā	123 grains.
Acetic ether	℥ij.

Dissolve by the heat of a water bath, and add

Oil of thyme	gtt. xx. Mix.

Applied as a liniment in rheumatism, &c.

BALSAMUM ACOUSTICUM. *Balsamum peruvianum cum felle.*

Dr. Hugh Smith.

℞ Ox-gall	ʒiij.
Balsam of Peru	ʒj. Mix.

BALSAMUM ARCÆI. *Baume d'Arcæus. Arcæus' balsam.*

Soubeiran's Ph. 1840.

℞ Mutton suet	4 parts.
Turpentine	3 ,,
Elemi Resin	3 ,,
Axunge	2 ,,

Melt with a gentle heat, strain through cloth, and stir together until cold.

BALSAMUM GILEADENSE. *Balm of Gilead. Baume de Mecca. Opobalsamum. Balm of the Old Testament.*

A fragrant oleo-resin, obtained from the Balsamodendron gileadense. It was formerly held in high estimation as a medicinal agent, being considered antiseptic and vulnerary; its fumes were also said to be useful against barrenness. It has been used as a cosmetic for stimulating the skin and causing redness. It is rarely met with in this country.

BALSAMUM LOCATELLI. *Locatelli's Balsam.*

Lond. Ph. 1746.

℞ Olive oil	f℥xvj.
Strasburgh (or Venice) turpentine;	
Yellow wax, āā	lbss.
Red sanders	ʒvj

Melt the wax with part of the oil over a gentle fire; then add the rest of the oil and the turpentine; afterwards mix in the red sanders, (in powder,) and stir the whole together until the mixture grows cold.

This was considered pectoral, and is still occasionally used by the lower orders as a remedy for coughs, with an equal quantity of conserve of roses.

BALSAMUM NERVINUM. *Baume nerval.* *Nervine ointment.*

℞	Expressed oil of mace	℥iv.	
	Beef marrow	℥iv.	Melt and add
	Oil of rosemary	ʒij.	
	Oil of cloves	ʒj.	
	Camphor	ʒj.	Dissolved in
	Balsam of Tolu	ʒij.	
	Rectified spirit	ʒiv.	Mix.

Applied as a liniment in rheumatism, &c.

BALSAMUM PERUVIANUM. *Balsam of Peru.*

A black or reddish-brown liquid, about the consistence of treacle, with a smell somewhat resembling benzoin and petroleum. It is soluble in alcohol. Sp. gr. 1·15 to 1·16. It is imported from Valparaiso, Lima, and other South American ports.

BALSAMUM SULPHURIS. *Balsam of sulphur.*

Lond. Ph. 1746.

Boil flowers of sulphur with four times their weight of olive oil, in a vessel lightly covered, until they assume the consistence of a thick balsam.

BALSAMUM SULPHURIS BARBADENSE. *Balsam of sulphur with Barbadoes tar.*

Lond. Ph. 1746.

Boil flowers of sulphur with four times their weight of Barbadoes tar, until they assume the consistence of a thick balsam.

BALSAMUM SALPHURIS TEREBINTHINATUM. *Balsam of sulphur with Oil of turpentine.*

Edin. Ph. 1722.

℞	Flowers of sulphur	℥ij
	Oil of turpentine	f℥vj.

Digest them together, in a sand heat, till the oil be saturated with the sulphur; then separate the balsam from the undissolved sulphur.

BALSAMUM SULPHURIS ANISATUM.

Edin. Ph. 1722.

℞	Flowers of sulphur	℥ij.
	Oil of turpentine	f℥vj
	Oil of aniseed	f℥iv.

Digest in a sand heat till the oils be saturated with the sulphur; then separate the balsam from the undissolved sulphur.

BALSAMUM TOLUTANUM. *Balsam of Tolu.*

A transparent, yellowish brown substance, sometimes of the consistence of common turpentine, but more frequently much firmer, and even, occasionally, quite hard and brittle.

Bandoline. *Fixature. Clysphitique.*
Used for stiffening ladies' hair and keeping it in form.

No. 1.

℞	Castor oil	℥ij.
	Spermaceti	ʒj.
	Arnotto	ʒss.
	Oil of bergamot	ʒj.
	Otto of roses	gt. v.

Mix, with heat, and strain.

No. 2.

Thick mucilage of quince-seeds, scented with eau de Cologne, or any other spirit.

No. 3.

Thick mucilage of Carrageen moss, scented with eau de Cologne, or any other spirit.

No. 4.

℞	Oil of almonds	℥j.
	White wax	ʒj.
	Tincture of mastic	ʒiij.
	Oil of bergamot	ʒj.

Melt the wax in the oil with heat, and add the tincture of mastic and scent.

Baryta. *Barytes. Symb.* Ba O. *Equiv.* 76.
This earth was so called from its being the *heaviest* of the earths. (βαρυς, heavy.) Its sp. gr. is 4. It exists in several minerals, as in sulphate and carbonate of baryta. It can be obtained by calcining nitrate or iodate of baryta in a porcelain crucible.

Barytæ carbonas. *Carbonate of baryta. Witherite.*
Found native and in such state is sufficiently pure for the preparation of the other barytic salts, and is the kind ordered in the London Pharmacopœia. "Entirely soluble in dilute hydrochloric acid. This solution, on the addition either of ammonia or hydrosulphuric acid, throws down no precipitate and is colourless. When more than sufficient sulphuric acid is employed to saturate it, nothing is thrown down from the supernatant liquor by carbonate of soda."—*Lond. Ph.*

Barytæ nitras. *Nitrate of baryta.* $Ba\,O, NO_5$.
This may be obtained in the same manner as the muriate of baryta of the Edinburgh Pharmacopœia, only substituting pure nitric acid for the muriatic acid. The solution of this is employed as a test for sulphuric acid.

Barytæ sulphas. *Sulphate of baryta.* $Ba\,O, SO_3$.
The density of the native sulphate varies from 4 to 4·47. "White or flesh-red; heavy; lamellar; brittle."—*Edin. Ph.*

Barii chloridum. *Chloride of barium.* $Ba\,Cl + 2HO$.
First termed *Terra ponderosa salita*, and afterwards Muriate of barytes.

Lond. Ph. 1836.

℞	
Carbonate of baryta, broken into small pieces	℥x.
Hydrochloric acid	Oss.
Distilled water	Oij.

Mix the acid with the water, and to them add gradually the carbonate of baryta; then, heat being applied, and the effervescence being finished, strain the liquor and boil down, that crystals may form.

Edin. Ph. 1841.

Barytæ murias. *Muriate of baryta.*

℞	
Carbonate of baryta, in fragments	℥x.
Pure muriatic acid	Oss.
Distilled water	Oij.

Mix the acid and water; add the carbonate by degrees; apply a gentle heat towards the close of the effervescence; and when the action is over, filter, concentrate, and set aside the solution to crystallize.

Or,

℞	
Sulphate of baryta	lbij.
Charcoal, in fine powder	℥iv.
Pure muriatic acid	q. s.

Heat the sulphate to redness; reduce it to fine powder; mix the charcoal with it thoroughly; heat the mixture in a covered crucible for three hours at a low white heat. Pulverize the product; put it gradually into five pints of boiling water; boil for a few minutes; let it rest for a little over a vapour-bath; pour off the clear liquor, and filter it if necessary, keeping it hot. Pour three pints of boiling water over the residuum and proceed as before. Unite the two liquids and, while they are still hot, or if cooled, after heating them again, add pure muriatic acid gradually, so long as effervescence is occasioned. In this process the solutions ought to be as little exposed to the air as possible; and in the last step the disengaged gas should be discharged by a proper tube into a chimney or the ash-pit of a furnace. Strain the liquor, concentrate it, and set it aside to crystallize.

Note.—One hundred grains in solution are not entirely precipitated by 100 grains of sulphate of magnesia.

Dub. Ph. 1826.

℞	
Sulphate of baryta	10 parts
Charcoal reduced to the most subtile powder, or of lampblack	1 part

Let the sulphate of baryta be roasted in the fire, and whilst red-hot thrown into water; then let it be reduced to the finest powder, in the manner directed for prepared chalk. Let the powders, intimately mixed together, be passed into a crucible and exposed to a strong heat until they become red-hot, during four hours. Let the mass, when cold, be dissolved in a quantity of boiling distilled water, amounting to ten times the weight of the sulphate of baryta, and let the liquor be filtered. To this add, avoiding the vapours, as much muriatic acid as may be sufficient to saturate the baryta. Then let the liquors be filtered, from which, by evaporation and cooling, let crystals be formed.

Use.—Rarely employed in medicine; chiefly as a re-agent for detecting sulphuric acid or sulphates.

BARILLA.

The impure soda imported from Spain and the Levant. It is made by burning sea plants, chiefly of the genus *Salsola*, and collecting the ashes, which occur in porous masses, of a brown colour. *Kelp*, which is made in this country by burning different species of *Fucus*, is sometimes called *British barilla.*

BASSORA GUM. *Gomme Kutera* of Th. Martius.

These names have been applied to a species of Tragacanth met with amongst the gum senegal of commerce.

BDELLIUM.

A gum-resin, some species of which somewhat resemble myrrh. *African bdellium*, according to Pelletier, consists of resin, 59·0; soluble gum, 9·2; bassorine, 30·6; volatile oil and loss, 1·2. *Indian bdellium*, is sometimes sold in France under the name of Indian myrrh.

BEARS'-GREASE.

The soft fat obtained from the bear, has been thought to be a good application for preserving and promoting the growth of the human hair. Bears are sometimes fattened in this country and killed for the sake of their fat. Bears'-grease is also imported from Russia; but when thus obtained it is usually rancid. Most of what is sold in this country for *bears'-grease* is a mixture of lard and oil. The soft fat of calves is said to make a better imitation of *bears'-grease* than lard.

BEDEGUAR. *Sweet briar sponge. Gall of the eglantine.*

This is a hairy globular excrescence, found on the sweet briar or eglantine. Being a species of gall, it is supposed to contain tannic or gallic acid, but it has not been analysed. It was formerly administered medicinally, in doses of 10 to 40 grains, as a diuretic and lithontriptic: it has also been recommended as an anthelmintic.

BEBEREENE.

A supposed alkaloid, obtained from the bark and fruit of the beberu tree, in the same way that quinine is from cinchona bark. It has been recommended as a substitute for quinine.

BEER.

The fermented infusion of malted barley flavoured with hops. The manufacture of beer involves several distinct processes: 1st, *the malting*, or conversion of the grain into malt; 2ndly, *the mashing*, or making the infusion of malt or sweet wort; 3rdly, *the hopping*, or boiling the sweet wort with hops; 4thly, *the fermenting*, or converting a portion of the saccharine matter into spirit; and 5thly, *the fining*, *ripening*, and *preservation* of the beer.

Malting, is a process by which part of the starch of grain is converted into dextrine and sugar. The grain is steeped in water for two or three days, or until it has swelled, become somewhat soft and tender, and tinged the water of a reddish brown colour. The water is then drained away, and the wet grain spread on a floor, in heaps of about two feet deep, called the *couch*, until it begins to sprout or germinate. It is then spread out in thinner heaps, and turned from day to day, to equalize the effect throughout the heap. When germination has extended far enough, the vitality of the seed is destroyed by the application of the heat of a kiln. This heat is applied gradually until the grain is rendered dry and crisp. This is malt; and its qualities differ according as the grain has been more or less soaked, germinated, dried, and baked. The colour of malt varies from very pale to nearly black. It is crushed in a mill before using it.

Mashing, consists in extracting the soluble matter of the malt by means of hot water. The water used for this purpose should be between 145° and 160° Fahr.; the best temperature is said to be 157° Fahr. The malt is generally treated with several separate portions of water, and the product is called the sweet wort.

Hopping, is the boiling of the wort with hops. The effect of this part of the process is to impart the aromatic bitter flavour of the hop, and at the same time to remove some albuminous matter from the infusion, which, if allowed to remain, would cause the decomposition of the beer. No substitute for hops has been found to answer the purpose so well.

Fermenting, consists in the conversion of the dextrine and sugar into spirit. The temperature best suited for conducting the fermentation is from 55° to 60° Fahr. In winter, when the atmosphere is cold, the fermentation should be commenced when the liquor has been cooled to 64° or 60°; in summer it should be cooled to about 50°. The fermentation is induced by the addition of yeast to the wort; this process is called *setting*.

Fining, *ripening*, and *preservation* of beer, involve particular management, which requires to be varied more or less in every separate case.

Ale. Barley wine. Ala. Cerevisia alba.

No. 1.

Pale malt, 14 quarters, mashed at three times with 28, 18, and 18 barrels of water, boiled with 112 lbs. of hops, set with 36 lbs. of yeast, cleansed with 4 lbs. of salt;—produces 34 barrels, or 9 pints from each gallon of malt.

No. 2.

Devonshire white ale.

Pale ale wort, 25 gallons; hops, 2 handfuls; yeast, 3 lbs. grouts, 6 or 8 lbs. When the fermentation is at its height bottle in strong stone half-pint bottles, well corked and wired. Effervesces when opened.

No. 3.

Table ale.

Very pale malt, 12 quarters, mashed at three times with 46, 32, and 32 barrels of water, boiled with 62 lbs. of hops, set with 114 lbs. of yeast, cleansed by beating in the yeast head and taking it out again;—produces 100 barrels, or 4 gallons of ale from each gallon of malt.

Porter. Draught porter.

No. 1.

Pale malt, 7 quarters; amber malt, 6 quarters; brown malt, 3 quarters; mashed at twice with 56 and 48 barrels of water; boiled with 113 lbs. of Kentish hops; set with 80 lbs. of yeast, 4 lbs. salt, ½ lb. flour;—produces 56 barrels of porter, or 3½ gallons from each gallon of malt. A third mashing of the same grains produces 20 barrels of table beer.

No. 2.

Bottling porter.

Pale malt, 4 quarters, amber malt, 3 quarters, brown malt, 3 quarters, mashed at three times with 24, 13, and 12 barrels of water; boiled with 100 lbs. of hops; set with 52 lbs. of yeast, 2 lbs. of salt;—produces 34 barrels, or 1½ gallon from each gallon of malt.

Table beer. Cerevisia.

Malt, 8 bushels; treacle 10 lbs.; mashed with 10 barrels of water; boiled with 8 lbs. hops; add 8 lbs. of burnt sugar and 8 oz. of Spanish liquorice, and set with 6 lbs. of yeast.

Ginger beer.

No. 1.

℞	White sugar	lbiij.
	Bruised ginger	℥ij.
	Cream of tartar	℥j.
	Lemons, sliced	4
	Water, boiling	4 galls.
	Yeast	℥viij.

Pour the water on the four first-named ingredients and infuse for two hours, then strain; add the yeast, and when fermentation has continued for a few hours put it into stone bottles and secure down the corks.

No. 2.

℞	White sugar	lbjss.
	Bruised ginger	℥j.
	Cream of tartar	℥iij.
	Lemon juice	℥j.
	Water, boiling	1½ gall.
	Yeast	℥j.

Prepare as No. 1.

Spruce beer.

White.

℞	Sugar	lbvj.
	Essence of spruce	℥iv.
	Water, boiling	10 galls.
	Yeast	℥viij.

Add the water to the sugar and essence of spruce, ferment with the yeast, and bottle in the same way as ginger beer.

Brown.

Made in the same way as the white; but treacle is substituted for sugar.

Treacle beer.

℞	Treacle	lbxiv.
	Hops	lbjss.
	Water	36 galls.
	Yeast	lbj.

Boil the hops with the water, add the treacle, and ferment as in making common beer.

Bezoar. (From *Pa-zahar*, Persian, a destroyer of poison.) Morbid concretions formed in the bodies of different animals. Several of these were formerly celebrated for their medicinal virtues, and distinguished by the names of the countries from whence they came, or the animals in which they were found. They were considered powerful Alexipharmics; so much so, indeed, that other medicines supposed to possess alexipharmic powers were called *Bezoardics*. Bezoars were once valued at ten times their weight in gold.

Bezoar bovinum. Bezoar of the ox.

Bezoar germanicum. From the Alpine goat.

Bezoar histricus. *Lapis porcinus. Lapis malacensis. Petro del porco.*

From the Indian porcupine, said to be found in the gall-bladder. From the province of Malacca. It has an intensely bitter taste, which it imparts to water.

Bezoar microcosmicum. The calculus found in the human bladder.

Bezoar occidentale. *Occidental bezoar. Western bezoar.*

Said to be obtained from a species of antelope. The surface is rough. Grey, brittle, spongy. Sp. gr. 1·666. From Peru, &c.

Bezoar orientale. *Oriental bezoar.* Said to be obtained from the stomach of a species of goat. It is of an oblong figure, with a smooth and shining surface, of an olive or dark green colour. Sp. gr. 2·233. From Persia and the East.

Bezoar simiæ. *Monkey bezoar.*

From the stomach of a species of monkey, obtained by giving an emetic. Bright green, with a fine lustre. Formerly esteemed as a cordial.

Bird-lime.

A glutinous, very tenacious substance, of a greenish colour, sour flavour, and of the consistence of dough. The best bird-lime is made from the middle bark of the holly, which is boiled in water for seven or eight hours, or until it is quite soft, and then left to ferment for two or three weeks in pits in the ground. It is afterwards pounded in a mortar and washed with water.

An inferior kind is obtained from the misletoe, young shoots of the elder, and other vegetables.

Bismuthum. *Bismuth. Marcasita. Tectum argenti. Symb.* Bi. *Æquiv.* 72.

Occurs only in the mineral kingdom; is found in Cornwall, Saxony, Bohemia, &c. Is met with in the metallic state nearly pure, (*Native bismuth,*) and in combination with sulphur and with oxygen.

"It is dissolved by diluted nitric acid. When subnitrate of bismuth is precipitated from this solution by ammonia, the liquor is free from colour. Sp. gr. 9·8."—*Lond. Ph.*

"Its powder is entirely soluble in nitric acid with the aid of heat; and the solution is colourless, or nearly so, and deposits a white powder when much diluted with cold water."—*Edin. Ph.*

BISMUTHUM REPURGATUM. *Purified bismuth.*

Cod. Par. 1837.

℞ Bismuth of commerce	200
Nitrate of potash	10

Reduce the bismuth and nitrate of potash to powder; mix well the two substances; introduce the mixture into a crucible; heat to a red heat and let it cool. The bismuth will occupy the lower part of the crucible. Pulverize it again, and treat it once more with the same proportion of nitre.

N.B.—Thus obtained the metal is not yet chemically pure. It may, however, be employed in this state for pharmaceutical operations.

BISMUTHI TRISNITRAS. *Trisnitrate of bismuth,* L. *Bismuthum album,* E. *Bismuthi subnitras,* D.

Lond. Ph. 1836.

℞ Bismuth	℥j.
Nitric acid	f℥iss.
Distilled water	Oiij.

Mix a fluidounce of the distilled water with the nitric acid, and in them dissolve the bismuth; then pour off the solution. To this add the rest of the water, and set aside that the powder may subside; then, the supernatant liquor being poured off, wash the trisnitrate of bismuth in distilled water, and dry by a gentle heat.

Note.—Entirely soluble in nitric acid without effervescence. Nothing is thrown down on the addition of dilute sulphuric acid.

Edin. Ph. 1841.

℞ Bismuth, in fine powder	℥j.
Nitric acid (D. 1·380)	f℥jss.
Water	Oiij.

Add the metal gradually to the acid, favouring the action with a gentle heat, and adding a very little distilled water so soon as crystals, or a white powder, may begin to form. When the solution is complete pour the liquid into the water. Collect the precipitate immediately on a calico filter, wash it quickly with cold water, and dry it in a dark place.

Note.—It forms a colourless solution with nitric acid, and without effervescence: not subject to adulteration.

Dub. Ph. 1826.

℞ Bismuth, reduced to powder	7 parts
Diluted nitric acid	20 parts
Distilled water	100 parts.

Gradually add the bismuth to the acid and dissolve with heat. Mix the liquor with the water, and set aside the mixture that the powder may subside. Wash the powder with distilled water, and dry it on blotting-paper with a gentle heat.

Med. Use.—Sometimes recommended in cases of dyspepsia, characterized by painful contractions of the stomach. *Dose,* from g. v. to gr. xv.

BISTRE.

A brown colour which is used in water colours. It is prepared from the soot of beech wood. The soluble parts are washed away with water, and the insoluble residue mixed with gum-water, and formed into cakes.

BITTERN.

The *Mother-water*, or uncrystallized residue left after the separation of the chloride of sodium from sea-water by crystallization. It contains sulphate and muriate of magnesia, also a small quantity of bromine and iodine, and has a bitter taste.

BITUMEN.

Mineral pitch or tar, supposed to be formed in the earth from the decomposition of vegetable substances. It exists in several different conditions, either semifluid or hard. The semifluid sorts are distinguished as *Naphtha*, *Rock-oil*, *Petroleum*, or *Barbadoes tar*. These are met with in Persia, Rangoon, and other parts of Asia, in Switzerland, parts of France, the West Indies, North America, &c. The solid bitumen is distinguished as *Asphaltum*, *Jews' pitch*, &c. These substances are inflammable; they melt on the application of heat, and when mixed with dry chalk, brick-dust, or some other powder of this kind, form the dry *Bituminous mastic*, or *cement*, used for lining water-cisterns, covering roofs, terraces, foot-pavements, &c.

BLACK JAPAN, *for leather.*

No. 1.

℞	Boiled linseed oil	1 gall.
	Burnt amber	℥viij.
	Asphaltum	℥iij.

Boil together, and add sufficient oil of turpentine to give it the proper consistence.

No. 2.

℞	Oil of turpentine	℥ij.
	Shellac	℥j.
	Spirit of wine	℥iv.
	Lamp-black	℥ss.

Mix.

BLACK LEAD. *Plumbago. Graphite. Carburet of iron.*

A mineral of a lead or iron-grey colour, and very soft to the touch. It consists principally of carbon in a peculiar state of aggregation, and generally contains about 8 per cent. of iron. The finer kind is used for making pencils and crayons, and inferior kinds for giving a metallic lustre to the fronts of grates, &c.

BLACK REVIVER.

℞	Nut-galls	℥iij.
	Logwood, Sumach, Sulphate of iron, Iron-filings, āā	℥j.
	Vinegar	Oij.

Boil together for a quarter of an hour and strain.

BLACKING, for boots, shoes, &c.

No. 1.

℞	Ivory-black,	
	Treacle, āā	℥xij.
	Sperm oil,	
	Oil of vitriol, āā . .	℥iij.
	Common vinegar . .	Oiv.

Mix the ivory-black, treacle, and vinegar together, then mix the sperm oil and oil of vitriol separately, and add them to the other mixture.

No. 2.

℞	Ivory-black . . .	℥xij.
	Treacle	℥iv.
	Sperm oil . . .	℥j.
	Oil of vitriol . . .	℥ij.
	Vinegar	Oij.
	Sugar candy . . .	℥j.

Mix as No. 1.

No. 3.

℞	Lamp-black,	
	Brown sugar, āā . .	℥xvj.
	Sperm oil . . .	℥iij.
	Gum Arabic . . .	℥ss.
	Oil of vitriol . . .	℥iij.
	Vinegar	Oiv.
	Water	Oij.

Dissolve the sugar and gum in the water; add to this the lamp-black and oil, and then the vinegar and oil of vitriol previously mixed together.

No. 4.

℞	Ivory-black . . .	℥ij.
	Brown sugar,	
	Gum Arabic, āā . .	℥j.
	Small beer	Oj.
	The white of an egg.	

Mix. This does not require polishing with a brush.

BLACKING BALLS.

No. 1.

℞	Lard	
	Bees wax, āā . . .	℥j.
	Ivory-black,	
	Lamp-black,	
	Brown sugar, aa . .	℥viij.
	Common size . .	℥iv.

Mix, with heat, to form a cake.

No. 2.

℞	Mutton suet . . .	℥iv.
	Bees' wax,	
	Sweet oil,	
	Gum Arabic, āā . .	℥j.
	Lamp-black . . .	℥iv.
	Oil of turpentine . .	℥ss.

Melt the wax and suet with the oils, and stir in the lamp-black and gum in fine powder.

BLANQUETTE.

A sort of barilla obtained from different species of salicornia and salsola. Contains from 3 to 8 per cent. of carbonate of soda.

BLENDE. *Black jack.*

Native sulphuret of zinc.

BOLUS ARMENIÆ. *Armenian bole.*

Several argillacious or calcarious minerals were formerly used in medicine under the name of *Bolus* or *Bole*, differing more or less from each other in colour and composition. *Red boles* were formerly obtained from Armenia, Lemnos, Strigonium, Portugal, Tuscany, and Livonia; *Yellow boles* from Armenia, Tockay, Silesia, Bohemia, &c.; and *White boles* from Armenia, Lemnos, Lamos, &c. Several of these earths were made into small cakes and stamped with certain impressions, and were then called *Terræ sagillatæ*, or sealed earths. The only one of these now kept in the shops is the Armenian bole, which is usually made by mixing together common chalk and oxide of iron, or red ochre.

BOOT-TOP LIQUID, for cleaning boot-tops, &c.

No. 1.

℞	Sour milk	Oiij.
	Oil of vitriol	℥ij.
	Compound tinct. of lavender	℥iij.
	Gum Arabic	℥j.
	Lemon juice	℥ij.
	Whites of 2 eggs.	

Mix.

No. 2.

℞	Sour milk	Oiij.
	Cream of Tartar	℥ij.
	Oxalic acid,	
	Alum	āā ℥j.

Mix.

BORAX.

This is the biborate of soda. It occurs native in the East Indies and in South America. It is, however, now, generally made in this country by saturating native boracic acid with soda.

BOUGIE.

A cylindrical instrument to be introduced into the urethra, rectum, &c., for the purpose of dilating them. Bougies are usually made of slips of linen dipped into melted wax or plaster, and rolled up into compact cylinders on a heated tile. They are sometimes made of a mixture of glue and treacle, when they are very elastic and soft. Caoutchouc is also sometimes used in the preparation of them. Armed bougies are furnished with some active medicinal agent, such as caustic potash, nitrate of silver, or some preparation of mercury.

BRANDY.

A spirit distilled from wine, and possessing a peculiar and agreeable flavour, due to the presence of a small portion of volatile oil.

British brandy is made by flavouring corn spirit in imitation of the foreign brandy, but is very inferior to it. It may be made as follows:—

℞	Proof spirit	100 pounds,
	Crude Argol	1 pound,
	Acetic ether	4 ounces,
	French wine vinegar	16 ounces,
	Cognac brandy flavour	16 ounces,
	French plums, bruised	4 pounds.

Distil with a gentle fire.

Brandy colouring.

White sugar melted over a slow fire and heated until it has assumed a dark colour, then dissolved in water.

Brandy bitters.

℞	Gentian root, sliced	lbiij.
	Orange peel, dry	lbij.
	Cardamom seeds.	lbj.
	Cinnamom, bruised	℥viij.
	Cochineal	℥ij.
	Brandy	Cx.

Macerate for fourteen days and strain.

Brass.

An alloy of copper and zinc.

Bread (*Fermented*).

Dissolve 4 lbs. of common salt, and half a gallon of yeast, in about 36 lbs. of warm water; add sufficient flour to this to form it into a thin paste or dough; this mixture, which is called the *sponge*, is to be covered over, and put in a warm place to ferment; the fermentation usually commences in about an hour, the *sponge* swells up from the evolution of carbonic acid gas, and when no longer capable of confining the pent-up gas, it bursts and subsides; if the fermentation be allowed to proceed, the same effect will again and again take place; but after the first, or at the furthest, of the second or third subsidence of the *sponge*, the remainder of a sack (280 lbs.) of flour, mixed with about 144 lbs. of warm water, is to be added to the *sponge*, and well incorporated with it by kneading, which must be continued for some time; it is now allowed to ferment for a few hours, then again kneaded for a shorter time than before, and being made into loaves, is put into the oven and baked. The London bakers frequently substitute about half a ponnd of alum for an equal weight of the common salt, by which means the bread is rendered whiter, and the loaves part more easily.

Bread (*Unfermented*).

℞	Flour	lbv.
	Sesquicarbonate of soda	℥ss.
	Sesquicarbonate of ammonia	ʒss.
	Chloride of sodium	ʒiv.
	Hydrochloric acid	ʒv.
	Water	Oijss.

Mix intimately the salts with the flour, and the acid with the water, then mix the whole rapidly together with a wooden spatula so as to form a soft dough; put it into moulds, and introduce it into a quick oven immediately. It should be baked for about an hour and a-half.

Breeches balls, for cleaning leather breeches, &c.

℞ Powdered Bath brick	lbj.
Pipeclay in powder	lbij.
Pumice-stone in powder	℥iv.
Ox-gall	℥vj.
Soft soap	℥iv.

Water sufficient to form a paste, to be coloured with ochre, umber, or rose-pink.

Bromine.

A metalloid, obtained from sea-water, from several salt springs, and the ashes of some sea weeds. It is a deep-red coloured liquid, with a strong smell somewhat resembling chlorine.

Bronze.

An alloy of copper and tin, to which sometimes a little zinc and lead are added. A good bronze for medals is formed of 90 parts of copper, 8 of tin, and 2 of zinc.

Bronze powder. *Aurum sophisticum.*

℞ Verdigris	℥viij.
Tutty powder	℥iv.
Borax Nitre, āā	℥ij.
Corrosive sublimate	ʒij.

Make into a paste with oil, and melt them together.

Used as a gold colour.

Bronzing, is the art of giving to objects of wood, plaster, &c. the appearance of their being made of bronze. The term is sometimes used to signify the production of a metallic appearance of any kind upon such objects. The objects are first covered with a coat of size or oil varnish, and when nearly dry, bronze powder, the powder of Dutch foil, gold leaf, mosaic gold, or precipitated copper, is applied with a dry brush, or dusting-bag. A white metallic appearance is given to plaster figures by rubbing them over with an amalgam of equal parts of mercury, tin, and bismuth, and then applying a coat of varnish. The iron-coloured bronzing is effected by applying finely pulverized blacklead or plumbago. A bronze appearance is given to iron objects by plunging them into a solution of sulphate of copper, and allowing them to remain there until covered with a thin coating of copper. Copper coins, medals, &c., may be bronzed in the following manner:—Dissolve two parts of verdigris and one part of salammoniac in vinegar, boil the solution, strain it, and dilute with water until it has only a weak metallic taste, and on further dilution it lets fall no white precipitate. The solution is to be boiled, and then poured upon the objects to be bronzed, previously well cleaned and placed in a copper vessel; this vessel is to be put on the fire, and the solution kept boiling until the objects have acquired the proper colour. The Chinese are said to bronze their copper vessels by applying a mixture of two parts of verdigris, two of cinnabar, five of salammoniac, and five of alum, made into a paste with vinegar. This is repeatedly applied with heat, until the wished-for colour is produced.

BROWNING *of gun-barrels, &c.*, is effected by applying certain solutions which produce a thin film of oxide over the surface. This effect may be produced by enclosing the barrels in a space filled with the vapour of muriatic acid; or by moistening their surface with diluted muriatic or nitric acid. Chloride of antimony, or butter of antimony, is frequently used, and answers better than the foregoing; it is mixed with an equal quantity of olive-oil, and rubbed over the iron previously heated; it is then exposed to the air until the desired browning is effected, when it is carefully cleaned, and polished with wax, or covered with a varnish of shellac. The following solutions are used for the same purpose.—

No. 1.

℞	Nitric acid . . .	℥ss.
	Sweet spirit of nitre .	℥ss.
	Spirit of wine . .	℥j.
	Sulphate of copper . .	℥ij.
	Tincture of chloride of iron	℥j.
	Water . .	℥xxx.
Mix.		

No. 2.

℞	Sulphate of copper . .	℥j.
	Water . . .	℥iv.
	Sulphuric ether . .	℥ij.
Mix.		

BROWNING, for colouring and flavouring meat and made dishes.

Put ℥iv of powdered white sugar, and ℥j of fresh butter into a clean saucepan, and heat them over the fire until they begin to froth, and acquire a dark brown colour; then gradually add Oj of port wine, ℥ss each of Jamaica and black pepper, six cloves, six challots peeled, three blades of mace bruised, ℥iss each of walnut and mushroom ketchup, some salt, and a little lemon-peel. Boil the whole gently for fifteen minutes, then strain and bottle it for use.

BRUCIA.

A supposed alkaloid, obtained from nux vomica and other vegetable substances of that class.

BRUNSWICK BLACK, for varnishing grates.

Melt 4 lb. of common asphaltum, and add 2 lb. of linseed oil, and 1 gallon of oil of turpentine.

Bug poison.

1.

℞ Spirit of wine . . Oj.
Camphor . . . ℥ij.
Oil of turpentine . . ℥iv.
Corrosive sublimate . ℥j.
Mix.

2.

℞ Coal tar naphtha,
Oil of turpentine, aa . . ℥viij.
Mix.

3.

℞ Olive oil . . . ℥viij.
Oil of turpentine
Bees'-wax, aa . . . ℥ij.
Salammoniac
Arsenic
Corrosive sublimate, āā . ℥j.

Melt the wax and oils together; and then stir in the other ingredients, in powder, until the mixture is cold.

Cachou aromatisé. *Cachou de Bologna. Aromatic pastilles of catechu, of the Italians.*

This preparation owes its origin to the Italians. The following is said to be the original formula:—

1.

℞ Spanish liquorice . . ℥iijss.
Water . . . ℥iijss.

Dissolve by the heat of a water bath, and add,

Bengal catechu, in powder . 462 grs.
Gum arabic, in powder . 231 grs.

Evaporate to the consistence of an extract, and then incorporate the following substances in fine powder,

Mastic,
Cascarilla bark,
Charcoal,
Orris-root, āā . . 30 grs.

Reduce the mass to a proper consistence, remove it from the fire, and then add,

Oil of peppermint . gtt. xxx.
Tincture of ambergris,
Tincture of musk, āā . gtt. x.
Mix.

Form the mass into pills of one grain each, and cover them with gold or silver leaf.

They are usually made in this country from a more simple formula, such as the following:—

2.

Melt the best Spanish liquorice in a water bath with as much water as will form a hard pill-mass when cold, and flavour it with essential oils of peppermint, cloves, cinnamon, and pimento. Divide the mass into half-grain pills, flattened, and cover them with gold or silver leaf.

Calamina. *Lapis calaminaris, Calamine.*

The term *Calamine* is applied by mineralogists to two minerals, the *Silicate of zinc* and the *Carbonate of zinc*, which very nearly resemble each other in appearance. Both these minerals usually contain iron, copper, and other impurities. The latter of these, the *Native impure carbonate of zinc*, is that alone which is indicated by the term *Calamine* in the pharmacopœias. It is often largely adulterated with chalk, and some specimens met with in commerce have been found to consist chiefly of sulphate of barytes.

Calamina præparata.

Lond. Ph. 1836, and Dubl. Ph. 1826.

Burn the calamine, and then reduce it to powder. Afterwards submit it to the process of lixiviation, in the same manner as chalk is directed to be treated.

Edin. Ph. 1841. *Calamina præparata.*

"Levigated impure carbonate of zinc."

Calx. *Lime.* *Symb.* CaO. *Equiv.* 28.

Lond. Ph. 1836.

℞ Chalk . . . . lb j.

Break it into very small pieces, and burn it in a very strong fire for an hour.

Note.—Water being added, it cracks and falls to powder. For its other qualities, see *Calcis hydras.*

Edin. Ph. 1841.

Heat white marble broken into small fragments in a covered crucible at a full red heat for three hours, or till the residuum when slaked and suspended in water no longer effervesces on the addition of muriatic acid.

Note.—It is slaked by water; muriatic acid then dissolves it entirely, without any effervescence; and the solution does not precipitate with ammonia in excess.

In calcining marble or chalk, to obtain lime, it is necessary, when a crucible is used, that it should have holes perforated in the bottom, so as to admit a current of air through it.

Calcis hydras. *Hydrate of lime, Slaked lime.* $\mathrm{CaO, HO}$. Prepared by throwing water on lime. A part of the water combines with the lime, and thereby causes a considerable evolution of heat, by which another portion of the water is vaporized; the lime swells up, cracks, and falls to powder, and in this state it is called *Calx extincta, Slaked lime,* or *Hydrate of lime.*

Note.—Hydrate of lime is dissolved in dilute hydrochloric acid without effervescence. This solution throws down no precipitate on the addition of ammonia. Lond. Ph. 1836.

Calcii chloridum. *Chloride of calcium.*

Lond. Ph. 1836.

℞ Chalk . . . . ℥v.
Hydrochloric acid,
Distilled water, āā . . . . Oss.

Mix the acid with the water, and to these gradually add the chalk, to saturation. Then, the effervescence being finished, strain; evaporate the liquor till the salt is dried. Put this into a crucible, and pour it, when melted at the fire, on a flat clean stone. Lastly, when it has cooled, break it into small pieces, and preserve it in a well-closed vessel.

Note.—Void of colour; but little translucent; hard and friable; totally soluble in water; the solution gives no precipitate on the addition of ammonia or chloride of barium, nor, when diluted with much water, with ferrocyanide of potassium.

Edin. Ph. 1841. *Calcis murias.*

℞ White marble, in fragments . . . ℥x.
Muriatic acid, (commercial,) and
Water, āā . . . . . . Oj.

Mix the acid and water; add the marble by degrees, and when the effervescence is over, add a little marble in fine powder till the liquid no longer reddens litmus; filter and concentrate to one-half; put the remaining fluid in a cold place to crystallize; preserve the crystals in a well-closed bottle. More crystals will be obtained by concentrating the mother-liquor.

Note.—Extremely deliquescent: a solution of 76 grains in one fluidounce of distilled water, precipitated by 49 grains of oxalate of ammonia, remains precipitable by more of the test.

Dubl. Ph. 1826.

℞ Of the liquor which remains after the distillation of the water of caustic ammonia, any requisite quantity; filter the liquor, and expose it in an open vessel to heat until the muriate of lime becomes perfectly dry. Let it be preserved in a vessel completely closed.

CALCII CHLORIDI LIQUOR. *Solution of chloride of calcium.*

Lond. Ph. 1836.

℞ Chloride of calcium . . . ℥iv.
Distilled water . . . . f℥xij.

Dissolve the chloride of calcium, and strain.

Edin. Ph. 1841. *Calcis muriatis solutio.*

℞ Muriate of lime . . . . ℥viij.
Water . . . . . f℥xij.

Dissolve the salt in the water.

Dubl. Ph. 1826. *Calcis muriatis aqua.*

℞ Muriate of lime . . . . 2 parts.
Distilled water . . . . 7 parts. Dissolve.

Let the specific gravity of the liquor be to the specific gravity of distilled water as 1202 to 1000.

Uses. Has been deemed useful in bronchocele and scrofula. *Dose.* fʒj. to fʒij.

CALCIS CARBONAS. *Carbonate of lime.*

This occurs in both kingdoms of nature; several forms of carbonate of lime are employed in medicine: viz. marble, chalk, precipitated carbonate of lime, and carbonate of lime from animals. Most of them require some preparation before they are fit for use:—1st. MARMOR, *Marble, Carbonas calcis* (*durus*), L. *White marble*, E. *Marmor album*, D. This is used for the preparation of carbonic acid, as well as for other purposes; Carrara marble should be preferred in consequence of its being free from iron. 2. CRETA, *Chalk*—see CRETA. 3. CALCIS CARBONAS PRÆCIPITATUM, *Precipitated carbonate of lime;* this is ordered by the Dublin College in the preparation of the *Hydrargyrum cum cretâ.* It is thus prepared:

Dubl. Ph. 1826. *Calcis carbonas præcipitatum.*

℞ Water of muriate of lime . . . . 5 parts
Add of carbonate of soda, dissolved in four times its weight of distilled water . . 3 parts.

Let the precipitate be mixed with water, and suffered to subside, and let this operation be three times repeated with a sufficiently large quantity of water; lastly, when collected, let the powder be dried on a chalk stone or on paper.

4. CARBONATE OF LIME FROM ANIMALS. This is prepared from various animal substances: as oyster-shells, crabs' claws, crabs' stones, and red coral. These substances yield carbonate of lime blended with animal matter. The only preparation that comes under this head in the London Pharmacopœia is the *Testæ præparatæ*, for which see TESTÆ.

CALCIS CHLORIDUM. *Chloride of lime.*

According to the views entertained of its composition, this preparation has received different denominations; as, *Oxymuriate of lime; Chloruret*, or *Chloride of lime; Chlorite of lime; Hypochlorite of lime; Calx chlorinata*, or *Chlorinated lime.*

Lond. Ph. 1836. CALX CHLORINATA. *Chlorinated lime.*

℞ Hydrate of lime . . . . lbj.
Chlorine, a sufficient quantity.

Pass chlorine to the lime spread in a proper vessel, until it is saturated.

Chlorine is very readily obtained from hydrochloric acid by adding to it binoxide of manganese, with a gentle heat.

Note—It is soluble in dilute hydrochloric acid, evolving chlorine.

The following are the characters of good chloride of lime, as given in the Edin. Ph. 1841:—"Pale greyish white: dry: 50 grains are nearly all soluble in two fluidounces of water, forming a solution of the density 1027, and of which 100 measures treated with an excess of oxalic acid give off much chlorine, and if then boiled and allowed to rest 24 hours, yield a precipitate which occupies 19 measures of the liquid."

M. Labarraque, to whom the Académie des Sciences awarded the Monthyon prize of 3000 francs, in 1825, for the success with which he demonstrated the efficaciousness of the chlorurets of soda and of lime, as disinfecting agents, proposes the following formula for its preparation:—

Chloruret of lime.—Slake quick-lime with a small quantity of water; mix the powder with a 20th of its weight of hydrochlorate of soda, (common salt,) and place the whole in long earthenware vessels, into which chlorine is passed. The hydrated lime, being sufficiently charged with chlorine, begins to get moist, by which it may be known that the operation is carried far enough. In order to try its point of saturation, take one part of the chloruret and dilute it with 130 parts of water; this solution should decolorize four and a-half parts of sulphate of indigo.

Uses. As a disinfecting agent; it is also antiseptic. A solution of chloride of lime has been used as a wash in some skin diseases—also in certain species of ophthalmia. *Internally*, it has been given with advantage in bad cases of typhus fever and in dysentery. *Dose*, from one grain to five or six, dissolved in one or two ounces of water, sweetened with syrup. Disinfecting and decolorizing tooth-powders, washes, and lozenges often owe their efficacy to chloride of lime.

CALCIS CHLORIDI LIQUOR. *Solution of chloride of lime.*

This is usually made by adding one part of chloride of lime in powder to eight parts of water, stirring them together, allowing the mixture to stand for some hours, and then straining. It is sometimes obtained more highly charged with chlorine by mixing ℥iij of chloride of lime, f℥xvj of water, and f℥ss of diluted sulphuric acid; stirring the ingredients together, allowing them to stand for two hours, and straining. These solutions are used for disinfecting purposes, and as *bleaching liquors.*

CALCIS PHOSPHAS PRÆCIPITATUM. *Precipitated phosphate of lime.*

Dubl. Ph. 1826.

℞	Bones, burnt and powdered . .	1 part.
	Diluted muriatic acid,	
	Water, āā	2 parts.

Digest together for twelve hours, and strain the liquor; to this add solution of ammonia in sufficient quantity to throw down the phosphate of lime; wash the precipitate repeatedly with water, and then dry it.

CALCIS BIPHOSPHAS ET SULPHAS. *Biphosphate and sulphate of lime.*

℞	Burnt bones	lbij.
	Oil of vitriol	lbj.
	Water	lbiij.

Macerate with a gentle heat for two or three days.

This, mixed with water, or with earth, is used as a manure for land.

CAMPHOR, ARTIFICIAL.

Obtained by passing hydrochloric acid gas through oil of turpentine. It is a white crystalline solid, very like camphor; hence its name. Its composition is $C^{20}H^{17}Cl$.

CANDLE, MERCURIAL.

Candles made of wax and vermilion, have been recommended for effecting mercurial fumigations.

CAOUTCHOUCINE.

A very volatile liquid obtained by submitting caoutchouc to dry distillation, at a temperature of about 600° Fah., in an iron still. Mixed with spirit, it forms a good solvent for some of the most difficultly soluble resins, and for caoutchouc.

CAPERS.

Employed as a sauce in cookery. They consist of the flower-buds of the caper-tree, *Caparis spinosa*, preserved in vinegar. They are distinguished as *Nonpareille*, *Capucine*, *Capota*, *seconds* and *thirds*, according to their sizes and qualities. The smallest are considered the best.

CAPSULES. (From *Capsula*, a small box, case, or bag.)

Small egg-shaped vessels, in which nauseous medicines are administered. They are made either of a mixture of gelatine and sugar, or of animal membrane.

Gelatine capsules. A small polished iron bulb, of the form and size of the capsule, attached to a handle by a slender rod from one extremity, is first rubbed with an oiled cloth, then dipped into a thick, hot solution of 6 parts of gelatine and 1 of sugar in water; it is then removed from the solution, the excess of which is allowed to run off, and when it ceases to drip the handle is fixed in a board, with the coated bulb upwards, until the gelatinous coating has become cold and firm. The capsule is now drawn off the bulb by a dexterous application of the fingers, and is dried on a tray by exposure to the air. When perfectly dry, the capsules are ranged on a board, each capsule being placed in a small cell with its mouth upwards, and the liquid they are intended to contain is introduced by means of a syringe having a very fine nozzle. The mouths of the capsules are then stopped with a drop of the solution of gelatine applied with a camel's-hair pencil, and this is afterwards covered with a thin coating of the same solution, by dipping the mouth of each capsule into some of the solution diluted with a little water.

Membrane capsules, or *Organic capsules.* The manufacture of these is secured by a patent. The capsule is made of gut-skin, cleaned and purified, and while still moist, stretched over a bulb somewhat similar to that used in making the gelatine capsules.

CARAMEL.

Put sugar into a dish or pan, melt it over a gentle fire, and continue the heat until the sugar has assumed a dark brown colour. In this state it will be soluble in water, forming a deep reddish-brown solution. It is used for colouring spirits, &c.

CARBO ANIMALIS PURIFICATUS. *Purified animal charcoal.*

Lond. Ph. 1836.

℞ Animal charcoal . . . lbj.
Hydrochloric acid,
Water, āā . . . f℥xij.

Mix the hydrochloric acid with the water, and pour it gradually on the charcoal; then digest for two days with a gentle heat, occasionally shaking. Set aside, and pour off the supernatant liquor; then wash the charcoal with water very frequently renewed, until nothing of acid is to be perceived; lastly dry.

Note.—It gives off no bubbles on the addition of hydrochloric acid, nor is any thing thrown down from this acid on adding either ammonia or sesquicarbonate of ammonia.

Edin. Ph. 1841.

℞ Ivory-black . . . lbj.
Muriatic acid, commercial,
Water, āā . . . f℥xij.

Mix the acid and water; add gradually the ivory-black, stirring occasionally. Digest with a gentle heat for two days, agitating from time to time. Then boil; dilute with 2 pints of water; collect the undissolved charcoal on a filter of linen or calico, and wash it with water till what passes through scarcely precipitates with solution of carbonate of soda. Heat the charcoal, first moderately, and then to redness, in a closely-covered crucible.

Note.—When incinerated with its own volume of red oxide of mercury, it is dissipated, leaving only a scanty ash.

CARBON, BISULPHURET OF.

A very transparent, mobile, colourless liquid, having a peculiar offensive smell. Sp. gr. 1·27. It boils at 108°, is very combustible, and readily dissolves phosphorus, sulphur, camphor, resins, and volatile oils. It is obtained by passing the vapour of sulphur over red-hot charcoal, or by distilling a mixture of bisulphuret of iron and charcoal. It has been used in medicine as an external application.

CASSAVA. *Cassava bread.*

A farinaceous food made of the starch and some of the ligneous fibre of the *Janipha manihot*, the tree yielding tapioca. It is made in flat cakes which are baked on iron plates.

CATAPLASMA ALUMINIS. *Cataplasm of alum.*

Dubl. Ph. 1826.

℞ Whites of two eggs,
Alum āā . . . . . . ʒj.

Shake them together, so as to form a coagulum.

Med. uses.—A very useful application in ecchymosis of the eye, in ichorous ophthalmia, also in chilblains not yet broken. It should be applied between folds of linen.

CATAPLASMA CARBONIS LIGNI. *Cataplasm of charcoal.*

Dubl. Ph. 1826.

Take a sufficient quantity of wood charcoal, red hot from the fire, and extinguished by having dry sand poured over it; reduce it to a very fine powder. Add it to the simple cataplasm made warm.

Med. use.—As an antiseptic, it is employed to improve the condition of foul and gangrenous ulcers.

CATAPLASMA CONII. *Cataplasm of Hemlock.*

Lond. Ph. 1836.

℞ Extract of hemlock . ℥ij.
Water . . . . Oi.
Mix, and add
Linseed, bruised, as much as may be sufficient to make it of a proper consistence.

Dubl. Ph. 1826.

℞ Of the dried leaves of hemlock . . . ℥j.
Water . . . . jss.
Boil down to a pint, and the liquor being strained, add enough of the same kind of powder to make a poultice.

Med. use.—An anodyne application to cancerous and scrofulous ulcers and other malignant sores.

CATAPLASMA DAUCI. *Carrot cataplasm.*

Dubl. Ph. 1826.

℞ The root of cultivated carrot, any quantity.
Boil the root in water until it becomes soft enough to form a cataplasm.

Med. use.—Antiseptic and soothing. Useful to correct the foul discharge of fœtid ulcers, and to allay the pain of cancerous and phagedenic sores.

CATAPLASMA FÆCULÆ CEREVISIÆ. *Cataplasm of beer-grounds, Cataplasma bynes.*

℞ Grounds of stale beer,
Oatmeal, of each as much as may be required to make a poultice.

Med. use.—It is applied cold twice or thrice a-day, in the same cases as the following preparation,—which see.

CATAPLASMA FERMENTI. *Cataplasm of yeast.*

Lond. Ph. 1836.

℞ Flour . . . . lbj.
Yeast of beer . . Oss.
Mix, and apply a gentle heat until they begin to swell.

Dubl. Ph. 1826.

℞ Yeast . . . . lbss.
Flour . . . . lbj.
Mix, and apply an inferior heat, until the mixture begins to swell.

Use.—To correct the fetor of the discharge of gangrenous or foul ulcers.

CATAPLASMA LINI. *Cataplasm of linseed.*

Lond. Ph. 1836.

℞ Boiling water . . . . . Oj.
Linseed, bruised, as much as may be sufficient to make it of a proper consistence. Mix.

CATAPLASMA SIMPLEX. *Simple cataplasm.*

Dub. Ph. 1826.

℞ Of the powder for a cataplasm, any quantity;
Boiling water, enough to form a tepid cataplasm, which should be smeared over with olive oil.

Use.—An emollient application to inflamed parts and irritable sores.

CATAPLASMA PANIS. *Bread cataplasm.* Codex.

Pour boiling water on crumb of bread, and cover it until completely soaked; pour off the water, press the bread gently, and then beat it up with a spoon.

CATAPLASMA PAPAVERIS. *Poppy catasplasm.* Codex.

Thicken decoction of poppies with crumb of bread.

CATAPLASMA ROSÆ. *Rose cataplasm.* Codex.

℞ Powdered alum ʒss, Confection of roses ℥ij. Mix.

CATAPLASMA SINAPIS. *Mustard cataplasm.*

Lond. Ph. 1836. Dub. Ph. 1826.

℞ Linseed, Mustard-seed, each powdered . . lbss.
Vinegar, boiling, as much as may suffice to make the cataplasm of a proper consistence. Mix.

The Dublin College adds, "This may be made more stimulating by adding 2 ounces of the scrapings of horse-radish root."

Med. use.—Stimulant and rubefacient. It is applied spread on cloth to the soles of the feet, in the low stage of typhus, as also in coma and apoplexy; to the chest, in typhoid pneumonia.

CATAPLASMA SOLANI TUBEROSI. *Potato cataplasm.*

Scrape the inner part of raw potatoes into a fine pulp, and apply it cold as a poultice.

CAUDLE.

A nourishing, restorative gruel, given to the sick, and to women during their confinement.

Into a pint of fine gruel, not thick, put, while it is boiling hot, the yolk of an egg, beaten with sugar and mixed with a large spoonful of cold water, a glass of wine, and nutmeg. Mix the whole well together.

Brandy is sometimes substituted for the wine, and lemon peel or capillaire added.

It is also sometimes made of gruel and beer, with sugar and nutmeg.

CAUSTICUM. *Caustic.*

An application for destroying the vitality of any part of the body.

Dr. Canquoin's Caustics for Cancers, Lupus, &c.

	No. 1.	No. 2.	No. 3.	No. 4.
℞ Chloride of zinc .	ʒj.	℥j.	℥j.	℥j.
Flour . . .	℥ij.	℥iij.	℥iv.	℥iiss.
Chloride of antimony (Butter of antimony)				℥ss.

To be made into a stiff paste with water, and a small piece formed like a wafer to be applied to the part affected for twenty-four hours.

Mr. Alex. Ure substitutes *Plaster of Paris* for flour.

Plunket's caustic for cancers, &c.

℞	Upright crow-foot, Lesser spearwort, of each	℥j.
	White arsenic	ʒj.
	Sulphur	℈v.

Beat into a uniform paste, and make into balls, which are to be dried in the sun.

Recamier's caustic.

℞	Chloride of gold	grs. vj.
	Aqua regia	℥j. Mix.

To be applied with a camelhair brush.

Gondret's Ammoniacal caustic.

℞	Mutton suet, Olive oil, āā	℥j.

Melt with a gentle heat, and then add

Solution of ammonia	℥ij.

Mix, by agitating the whole together until cold.

This is used for producing an immediate revulsion, or for promptly raising the epidermis.

CAVIARE. *Caviar.* *Caviale.*

The salted roe of certain species of fish, especially the sturgeon.

CAWK.

A name adopted by miners for sulphate of barytes.

CEMENT.

A substance capable of assuming a fluid or semifluid form, and of being in that state applied between the surfaces of bodies, so as to unite them by solidifying. Cements are made in a variety of ways, to suit particular purposes.

Armenian cement. *Chinese cement.* *Diamond cement.*

Soak isinglass in water until it is soft, then dissolve it in the smallest possible quantity of proof spirit, with the aid of a gentle heat. In ℥ij of this dissolve grs. x of ammoniacum, and, while still liquid, add a solution of ʒss of mastic in ʒiij of rectified spirit; stir them well together, and put the mixture into small bottles, which are to be kept covered.

This cement, when used, is to be liquified by putting the bottle into hot water. The quality of the cement improves with the application of heat, so that the last portions of a bottle will often be found to be better than the first. This cement resists the action of moisture. It is used by the Armenian jewellers for fixing ornamental stones to jewellery, &c.

Botany Bay cement.

℞	Botany Bay resin, Brick dust, āā	lbj.

Mix together with heat.

Used to cement earthenware articles.

Cap cement.

This is one of the numerous cements which contain wax and resin, and are used for causing adhesion, or making tight joints, at common temperatures.

℞ Yellow resin	℥v.
Bees' wax	ʒj.
Red ochre	℥j.

The latter should be well dried on a sand-bath, the wax and resin melted together, the powder stirred in by degrees, and the heat continued a little above 212°; and when the frothing has ceased, stirred till so cold that there is no fear of the earthy particles falling.

Chemical and Electrical apparatus cement.

℞ Resin	lbv.
Bees' wax	lbj.
Red ochre	lbj.
Plaster of Paris	℥ij.

Mix together with the aid of heat.

Engineers' cement.

No. 1.

Mix ground white-lead with as much finely powdered red-lead as will make it of the consistence of soft putty.

No. 2.

Mix equal parts of white-lead and red-lead, and add as much boiled linseed oil as is required to give it the proper consistence.

These cements are used for making metallic joints sound.

French cement.

Gum-water thickened with powdered starch. It is used by the French naturalists and artificial-flower makers. It keeps for a long time. A little lemon juice is sometimes added.

Marine cement.

Equal parts of caoutchouc and shellac, dissolved separately in coal-tar naphtha, and mixed together. This forms a very strong cement: it is used for joining wood, &c.

Parolic cement. Universal cement.

Curdle skimmed milk; collect the curd; press out the whey; break the curd into small pieces; dry it by the heat of a water-bath, and reduce it to a fine powder. To ℥x. of this powder add ℥j. of finely-powdered quicklime, and ℈ij. of camphor. Mix them well together, and keep the mixture in closely-stopped bottles. When used, a portion of the powder is to be mixed with a little water so as to form a paste, which is to be applied quickly.

Seal engravers' cement. Plumbers' cement.

℞ Common resin, Brick-dust, āā	lbj.

Mix with the aid of heat.

This is inferior to the Botany Bay cement.

Tooth cements.

No. 1.

℞	Sandarac	ʒij.
	Mastic	ʒj.
	Amber	gr. x.
	Ether	ʒj.

Put the ingredients into a stoppered bottle, and dissolve with the aid of heat.

No. 2.

Put ℥ij mastic, and ℥iij of absolute alcohol, into a bottle capable of holding lbij. Effect solution by the aid of heat; add ℥ix of dried balsam of Tolu, and again apply the heat of hot water, and frequently shake the ingredients together; then allow the bottle to stand in the hot water for some time, that any insoluble matter may subside. This is to be introduced into the tooth with a piece of cotton wool.

No. 3

Vienna Tooth cement,

Consists of a viscid solution of some of the foregoing resins with powdered asbestus.

No. 4.

Ostermaier's Tooth cement.

The principle of this is the formation of phosphate of lime in the cavity of the hollow tooth.

For this purpose anhydrous phosphoric acid must first be formed by burning phosphorus under a bell jar: 48 parts of the anhydrous acid are to be mixed with 58 parts of pure unslaked lime in fine powder, and the requisite quantity pressed into the tooth after it has been *well dried.*

No. 3.

Metallic Tooth cement. Poudre metallique.

Is supposed to be a triple amalgam of mercury, silver, and ammonium, with an excess of the latter, and that part of the ammonium loses hydrogen, and escapes as ammoniacal gas, whilst the remainder of the ammonium, silver, and mercury remain as a firm alloy in the cavity of the tooth.

Various cements.

No. 1.

Shellac dissolved in rectified spirit, forms a good cement in some cases. Or the shellac may be melted at the flame of a candle and applied in this state. Shellac dissolved in water, with one-third of its weight of borax, is sometimes used.

No. 2.

White of egg, mixed with finely-powdered quick-lime, forms a good cement for joining spars and marble ornaments.

A similar composition is used by coppersmiths to secure the joints and rivets of boilers, but they substitute bullock's blood for white of egg.

No. 3.

℞	Clean river sand	lbxx.
	Litharge	lbij.
	Quick-lime	lbj.
	Linseed oil	q. s.

To form a thin paste. This cement is applied to mend broken pieces of stone, as steps, &c., and after a time it acquires a stony hardness.

A similar composition has been used to coat brick walls, under the name of mastic.

No. 4.

℞ Iron-borings, 50 lbs., pounded and sifted, mixed with chloride of ammonium or salammoniac, 1 lb. When it is to be used, it should be mixed with as much water as will give it a pasty consistence.

This is an excellent cement for stopping cracks in iron boilers, tanks, &c.

No. 5.

℞	Borings of iron	lbiv.
	Potters' clay	lbij.
	Powdered potsherds	lbj.

Made into a paste with salt and water. Becomes very hard on drying.

No. 6.

℞	Chalk	lbj.
	Glue	lbij.
	Paper, boiled in water and beaten to a pulp	lbj.

Mix. Used for making architectural ornaments in relief.

No. 7.

℞	Whiting, sifted and heated to redness	lbxvj.
	Black rosin	lbxvj.
	Bees' wax	lbj.

The last two are to be melted together, and the whiting stirred in during the cooling.

No. 8.

℞ Boiled linseed oil and red lead mixed, so as to form a thin paste, is used by engineers.

Hamelin's Mastic cement.

Mix 50 parts of silicious sand, 50 parts of lime-marl or pulverized Portland or Bath stone, and 8 parts of litharge. When the cement is used, it is to be ground up with linseed oil.

Keene's Marble cement.

Gypsum is baked in the same way as for making plaster of Paris; it is then soaked in a saturated solution of alum, again baked to the same degree as before, and ground to a fine powder. It is now in a fit state for use. On being worked in the same way as plaster of Paris, it sets into a very hard composition, which is capable of taking a high polish. It may be coloured by mixing the powder with water containing any mineral colours, instead of common water.

Roman cement. Hydraulic mortar. Parker's cement.

This is a kind of cement or mortar which sets or becomes hard when covered with water. All good hydraulic mortars contain alumina and silica, in addition to lime. Some of the poorer sorts of limestone, containing from 8 to 25 per cent. of silica, alumina, magnesia, &c., when burnt, yield a lime which does not present the usual phenomena of slaking, but which, when made into a paste with water, possesses the property of hardening under water. Cements possessing this property are also made by burning puzzolana, septaria, and silicious or argillacious earths, with or without common limestone, and then grinding them to powder.

CERATUM. *Cerate.*

Lond. Ph. 1836.

℞ Olive oil	f℥iv.
Wax	℥iv.

Add the oil to the melted wax and mix.

CERATUM SIMPLEX. *Simple cerate.*

Edin. Ph. 1841.

℞ Olive oil	6 parts,
White wax	3 parts,
Spermaceti	1 part.

Heat the oil gently, add the wax and spermaceti, stir the whole gently when it is fluid, and continue the agitation as it cools.

CERATUM CALAMINÆ. *Cerate of calamine. Turner's cerate. Ceratum epuloticum.*

Lond. Ph. 1836.

℞ Calamine, Wax, āā	lbss.
Olive oil	f℥xvj.

Mix the oil with the melted wax, then remove them from the fire, and when first they begin to thicken, add the calamine, and stir constantly until they cool.

Edin. Ph. 1841.

℞ Calamine, prepared in the same manner as prepared chalk	1 part.
Simple cerate	5 parts.

Mix them well together.

CERATUM CANTHARIDIS. *Cerate of Cantharides.*

Lond. Ph. 1836.

℞ Cantharides, rubbed to fine powder	℥j.
Cerate of spermaceti	℥vj.

Add the cantharides to the cerate softened by heat, and mix.

CERATUM CETACEI. *Spermaceti cerate.*

Lond. Ph. 1836.

℞ Spermaceti	℥ij.
White wax	℥viij.
Olive oil	Oj.

To the spermaceti and wax, melted together, add the oil, and stir them with a spatula until they are cold.

CERATUM HYDRARGYRI COMPOSITUM. *Compound cerate of mercury.*

Dubl. Ph. 1836.

℞ Stronger mercurial ointment, Soap cerate, āā	℥iv.
Camphor	℥j.

Rub them together until they are mixed.

CERATUM LABIATÆ. *Lip salve.*

℞ Spermaceti	℥iss.
White wax	ʒix.
Oil of almonds	℥xij.
Alkanet root	℥ij.
Otto of roses	ʒj.

Digest the first four ingredients in the heat of a water-bath for four hours, then strain through fine flannel, and add the otto of roses.

CERATUM NEUTRALE. *Kirkland's Neutral cerate.*

℞ Lead plaster	℥viij.
Olive oil	f℥iv.
Prepared chalk	℥iv.
Distilled vinegar	f℥iv.
Goulard's extract of lead	f℥ss.

Melt together the plaster and oil, add the chalk, and lastly the Goulard's extract, mixed with the distilled vinegar.

CERATUM PLUMBI ACETATIS. *Cerate of acetate of lead.*

Lond. Ph. 1836.

℞ Acetate of lead, in powder	ʒij.
White wax	℥ij.
Olive oil	f℥viij.

Dissolve the wax in f℥vij. of the oil; then to these gradually add the acetate of lead separately rubbed with the rest of the oil, and stir with a spatula until they incorporate.

CERATUM PLUMBI COMPOSITUM. *Compound lead cerate.*

Lond. Ph. 1836.

℞ Solution of Diacetate of lead	f℥iij.
Wax	℥iv.
Olive oil	Oss.
Camphor	ʒss.

Mix the melted wax with f℥viij of the oil, then remove them from the fire; and when they begin to thicken, gradually add the solution of diacetate of lead, and stir them constantly with a spatula until they cool; lastly, with these mix the camphor, dissolved in the rest of the oil.

CERATUM RESINÆ. *Resin cerate. Yellow basilicon.*

Lond. Ph. 1836, and U. S. Ph. 1842.

℞ Resin, Wax, āā	lbj.
Olive oil	f℥xvj.

Melt the resin and wax together with a slow fire; then add the oil, and strain the cerate, while hot, through a linen cloth.

CERATUM SABINÆ, *Savine cerate.*

Lond. Ph. 1836.

℞ Savine, bruised	lbj.
Wax	lbss.
Lard	lbij.

Mix the savine with the lard and wax melted together, then strain through a linen cloth.

Edin. Ph. 1841.

℞ Fresh savine	2 parts,
Bees' wax	1 part,
Axunge	4 parts.

Melt the wax and axunge together, add the savine, and boil them together till the leaves are friable, then strain.

CERATUM SAPONIS. *Soap cerate.*

Lond. Ph. 1836.

℞	
Soap	℥x.
Wax	℥xijss.
Oxide of lead	℥xv.
Olive oil	Oj.
Vinegar.	cong. j.

Boil the vinegar with the oxide of lead, over a slow fire, constantly stirring them until they incorporate; then add the soap, and boil again in like manner, until all the moisture is evaporated; lastly, with these mix the wax first dissolved in the oil.

CERATUM PRO TECTU. *Cerat pour le toucher. Cerate for touching.*

Soubeiran Ph. 1840.

℞	
Spermaceti	1 part.
Yellow wax	1 „
Olive oil	16 „
Caustic soda	1 „

Dissolve the spermaceti and wax in the oil with a gentle heat; then add the caustic soda, and stir the whole till it cools.

This cerate is used in lying-in houses, for practising the touching.

CHLORINE. Symb. Cl. equiv. 36. A heavy gas having a yellowish green colour. Sp. gr. 2·5. It has a pungent, suffocating smell, and if respired, unless very much diluted, it causes instant death. For the method of obtaining it, see the following formula of the Dubl. Ph.

CHLORINII AQUA. *Chlorine water.*

Edinb. Ph. 1841.

℞	
Muriate of soda	ʒj.
Sulphuric acid (commercial)	fʒij.
Red oxide of lead	350 grs.
Water	f℥viij.

Triturate the muriate of soda and oxide together; put them into the water contained in a bottle with a glass stopper; add the acid; agitate occasionally till the red oxide becomes almost all white. Allow the insoluble matter to subside before using the liquid.

Dubl. Ph. *Aqua chlorinii.*

℞	
Muriate of soda, dry	100 parts
Oxide of manganese	30 „
Sulphuric acid	87 „
Water	124 „

Add the acid gradually to the water, and when the mixture has become cold, pour it on the muriate of soda and oxide of manganese previously powdered, mixed, and put into a retort; then with a proper apparatus, and a moderate heat gradually increased, let the gas escaping from the mixture be transmitted through two hundred parts of distilled water, the process being concluded when the effervescence in the retort has subsided.

Chlorine water should be kept in well-stopped glass bottles, and in a place impervious to the rays of the sun.

CHOCOLATE.

A paste made of the roasted cacao-nut, triturated with sugar and aromatics, such as vanilla.

CIDER.

The fermented juice of the apple.

CLAIRET. *Rossalis des six graines.*

℞ The seeds of anise, Fennel, Dill, Coriander, Carraway, and *Daucus creticus*, āā	℥j.
Proof spirit	Oiv.
Sugar	lbj.

Macerate for a week, and strain.

CLOTHES BALL, for cleaning clothes.

℞ Pipeclay	lbij.
Fuller's earth, Prepared chalk, Ox-gall, āā	℥iv. Mix.

COFFEE.

The roasted berry of the *Coffæa Arabica*, extensively used in decoction or infusion, as an article of diet. The following have been used as substitutes for it:—

Rye coffee. Dillenius's coffee. Hunt's economical breakfast powder. Rye roasted with a little butter, and used as coffee.

Succory coffee. German coffee. Succory root roasted with a little butter or oil. It is extensively used for adulterating coffee.

Iris coffee. Sylvester's coffee. The seeds of the yellow water-flag, *Gladiolus luteus*, or *Iris pseudacorus.* This is said to be the best of the European substitutes.

Besides the above, fenugreek-seeds, chick-peas, holly-berries, broom-seeds, gooseberry-seeds, currant-seeds, rice, beet-root, and horse-beans, have severally been used for making a substitute for coffee.

COLD CREAM. *Ceratum galeni. Pommade en crème. Cremor frigida.*

℞ Sweet oil of almonds	℥x.
White wax, Spermaceti, āā	℥iss.
Rose water	℥x.
Oil of bergamot	℥ss.
Oil of lavender	ʒj.
Otto of roses	ʒj.

Melt the wax and spermaceti in the oil of almonds by the heat of a water-bath, then put these into a *marble mortar* previously heated to the temperature of boiling water, and add the rose-water gradually, while the mixture is constantly stirred or whisked with an egg-whisk, until the whole has become cold,

It is desirable to use a marble mortar, as it retains the heat longer than a wedgewood mortar. A smaller proportion of wax and spermaceti may be used in cold weather.

COLLYRIUM.

Liquid applications for the eyes, or eye-waters, are frequently designated by this name.

COLOPHONIUM. *Colophony. Black rosin.*

The residue left after the distillation of oil of turpentine from common turpentine. It differs from *Yellow rosin* in being anhydrous, while yellow rosin is a hydrate.

COLOURS.

Azure. Smalt. A blue pigment used in painting, and in getting up fine linen. It is a glass, coloured with cobalt and reduced to powder.

1.

Roast cobalt ore to drive off the arsenic; mix the residuary black oxide with as much oil of vitriol as will make it into a paste, and expose this, first to a moderate heat, then to a red heat, for an hour. Reduce the resulting sulphate to powder, and dissolve it in water. To the solution add carbonate of potash, in small quantities at a time, until the precipitate formed no longer indicates the presence of iron. The whole of the iron being thus removed from the solution, the latter is to be filtered, and precipitated by means of a solution of silicate of potash, made as follows:—Mix 10 parts of potash, 15 parts of finely-ground flints or sand, and 1 part of powdered charcoal; put the mixture into a crucible, and expose it to a bright red heat for five or six hours; the melted mass, when cold, is to be powdered and dissolved in five or six times its weight of water. The silicate of cobalt which is precipitated constitutes the blue pigment.

2.

Roast cobalt with three times its weight of sand, and an equal weight of potash, and reduce the fused mass, when cold, to powder.

Egyptian azure. Carbonate of soda ʒxv, calcined flints ʒxx, copper filings ℥iij. Mix and fuse them together in a crucible for two hours, and when cold, reduce to powder.

Ivory black. Cologne black. Cassel black. Made by calcining fragments or turnings of ivory in a close crucible or retort until the whole of the organic matter is carbonized. Common bones are sometimes used, but they do not produce so fine a black as ivory.

Lamp black. This is the carbonaceous matter deposited from the imperfect combustion of oils, resins, or other similar substances.

Cobalt blue. Chinese blue. Wash ℔j of zaffre to separate as much of the sand as possible; add to it ʒviij of nitric acid diluted with an equal quantity of water; digest for some hours, pour off the solution, and add more acid as long as anything is dissolved; evaporate the solutions nearly to dryness, so as to drive off the excess of acid; dissolve the salt in water, and filter it, then add a solution of phosphate of soda as long as any precipitate is formed; wash the violet-coloured subphosphate of cobalt, and mix it while still moist with eight times as much recently precipitated and still moist alumina; dry the mixture, and heat it to redness in a crucible.

2.

Precipitate the nitrate of cobalt, formed as directed in No. 1, with a solution of arseniate of potash, and mix the arseniate of cobalt with 16 times its weight of moist alumina.

3.

Add recently precipitated and moist alumina to solution of nitrate of cobalt.

4.

Add solution of ammonia alum to solution of nitrate of cobalt, and treat the precipitate as in No. 1.

Chemic blue. Sulphate of indigo. Indigo dissolved in from four to eight times its weight of the strongest oil of vitriol, and then diluted with water and neutralized with chalk or potash.

Liquid blue. To one ounce of powdered Prussian blue, add an ounce or two of strong hydrochloric acid; allow the mixture to stand for 24 hours, then add eight or nine ounces of water.

Prussian blue. Berlin blue. This pigment is made by calcining animal matter, such as dried blood, parings of horns, &c., with about one-eighth its weight of carbonate of potash, in an iron retort, exposed to a dull red heat for seven or eight hours; lixiviating the product of this operation, and adding common green vitriol, or sulphate of iron, to the lixivium.

Saxon blue. Dissolve ℥j of sulphate of iron, and ℥viij of alum, in one gallon of water, then add simultaneously solutions of prussiate of potash and of common pearlash, as long as any precipitate is formed. Collect and wash the precipitate.

Stone blue. Fig blue. Thumb blue. Crown blue. Mecklenburgh blue. Queen's blue. Mix finely powdered indigo with starch paste, and make it into cakes of the required size and form.

Bloom of roses. Carmine dissolved in liquor ammoniæ, and diluted with rose-water and spirit of wine.

Carmine. A pigment made from cochineal, as follows:—

1.

Boil ℔j of cochineal, and ℥j of bitartrate of potash in 4 gallons of pure distilled water, for 15 minutes; strain the decoction through flannel, add ℥j of alum, and ʒss of carbonate of potash, and again boil for five minutes; remove the liquid from the fire, and let it stand in glass or earthen vessels for two or three days, that the carmine may subside.

2.

Boil ℔j ℥iv of cochineal, and 115 grains of carbonate of soda, in 4 gallons of soft water for 20 minutes; then remove the boiler from the fire, and add ʒvj of alum, and ʒj of bitartrate of potash; stir the mixture for a few minutes, let it stand for a quarter of an hour for the dregs to subside, then carefully decant off the clear liquor, strain it through a fine silk sieve, and add the whites of two eggs well beaten up. Sometimes the carmine will immediately separate, but at other times it is necessary to put the liquor again over the fire and heat it, but not to the boiling point.

3.

Boil ℔j of cochineal, and ʒiijss of carbonate of potash, in 5 pails of water, for a quarter of an hour; remove the decoction from the fire, and stir in ℥j of alum; allow the solution to stand for a quarter of an hour, that the dregs may subside, then decant the clear liquor, and put it again over the fire, at the same time adding ʒiijss of isinglass dissolved in 1 gallon of water, and strained. At the moment of ebullition the carmine will rise to the surface; the pan is now to be removed from the fire and left at rest that the carmine may subside.

It should be dried in a stove, at a temperature from 82° to 86° Fah.

A wood or charcoal fire should be used in the process, as the effluvia from coal fires is said to be very injurious to the product.

Iris green. The juice of the petals of the iris added to quicklime.

Sap green. The juice of berries of buckthorn, of black alder, or of ever-green privet, 12 pints; lime water 8 pints; gum arabic, 6 ounces. Evaporate until quite thick.

Copper green. Blue bice. Blue carbonate of copper. Dicarbonate of copper. This is a mineral carbonate of copper, found in mines, and prepared for paints by grinding and washing.

Scheele's green. Mitis green. Arsenite of copper. Saturate a solution of carbonate of potash with arsenious acid, aided by the application of heat; then add this solution to a solution of sulphate of copper as long as any precipitate is formed. It is of a fine grass-green colour, and is used as a paint.

Vienna green. Sweinfurth green. Dissolve ℔j of arsenious acid in water; mix ℔j of powdered verdigris with warm water, and add the former solution to it; let the mixture stand until the reaction is complete. Sometimes the ingredients are boiled together, when the process is expedited. The addition of more arsenic gives the product a yellowish tint. It may also be made by dissolving ℔j of arsenious acid in water, and ℔j of verdigris in vinegar, mixing the two solutions; and evaporating the liquor until it crystallizes.

Brazil wood lake. Boil ℔j of Brazil wood in 4 gallons of water for 20 minutes; add ℔jss of alum, dissolved in water, and ℔ss of solution of tin; then precipitate with a solution of carbonate of potash or of soda, carefully avoiding excess of the alkali.

Carmine lake. (1.) To the coloured liquor remaining after the preparation of carmine, some recently precipitated and still moist alumina is added, and the mixture stirred and heated a little, until the colouring matter is carried down with the alumina.

2.

Add a solution of alum to the coloured liquor remaining after the preparation of carmine, and then a solution of carbonate of potash as long as any precipitate is formed. Solution of tin is sometimes added to brighten the colour.

Lac lake. Boil fresh stick-lac in a solution of carbonate of soda, and then add a solution of alum as long as any precipitate is formed.

Madder lake. Macerate 2 parts of best madder in 8 parts of cold water for a quarter of an hour, then put the madder into a cloth and press it strongly. Repeat this operation three times. The madder, after being thus exhausted of some of its colouring matter, is to be digested for three hours in a solution of 1 part of alum and 12 parts of water, with the heat of a water-bath; the liquor is then to be filtered, and a solution of carbonate of soda added in small quantities at a time to precipitate the lake.

Orange lake. Boil ℥iv of arnotto, and ℔j of pearlash in 1 gallon of water, for half an hour, then strain. Dissolve ℔jss of alum in 1½ gallon of water, and add this to the former solution, as long as any precipitate is formed.

Yellow lake. Persian or French berries are boiled with a solution of potash, and the colouring matter precipitated by means of alum, in the same manner as *Orange lake.*

Ochre. There are several native mixtures of argillaceous and calcareous earth and oxide of iron employed as paints and colours, under the generic name of *Ochre,* and which are distinguished from each other by differences in their colour or in their places of origin. The difference of colour depends partly on the state of oxidation of the iron, and partly on the proportion of oxide of iron present; the colour is sometimes modified by the application of heat. *Ochres* are generally prepared for use by the process of elutriation, in the same way as chalk. The different varieties are distinguished as *Brown ochre, Red* *ochre*, *Yellow ochre*, *French ochre*, which is yellow, *Oxford ochre*, and *Roman ochre*, which are of a brownish-yellow colour. *Indian red* and *Spanish brown* may also be classed among the *Ochres*.

Brown pink. Boil ℔j of French berries, ℔ss of fustic, and ℔j of pearlash, with 1½ gallon of water, in a tinned or pewter boiler, for half an hour, and then strain while hot. Dissolve ℔jss of alum in 2½ gallons of water, and add this solution to the former as long as any precipitate is formed. Collect, wash, and dry the precipitate.

Dutch pink. Boil ℔j of French berries, ℔ss of turmeric, and ℔j. of alum, with 1½ gallon of water, for half an hour, and strain; then evaporate the liquor to 2 quarts, and add ℔iij of whiting. Collect, wash, and dry the precipitate. It should be of a bright golden yellow colour. Starch or white-lead is sometimes substituted for whiting.

English pink. Prepared as *Dutch pink*, but more whiting is used.

Rose pink. Whiting coloured with a decoction of Brazil-wood and pearlash. The colour is very fugitive. Alum or solution of tin is sometimes used to vary the colour.

Orange red. Sandix. Made by calcining white-lead; it has a brighter colour than red-lead.

Red-lead. Minium. Plumbi oxidum rubrum. Made by roasting litharge in a reverberatory furnace. It is used in paints.

Brown red. Indian red. Colcothar. Under these names are sold the peroxide of iron obtained by calcining the salts of iron. The colour varies according to the circumstances under which the calcination is conducted. The true *Indian red*, *Terra Persica*, or *Ochra purpurea Persica*, is a mineral brought from Ormuz,—see *Ochre*.

Ruddle. Reddle. Red chalk. Red lumber-stone. These names are applied to clay iron ore—consisting of clay and oxide of iron—a mineral of a deep red colour, intermediate between *Bole* and *Red ochre*, containing more oxide of iron than the former, and less than the latter. It is used for marking on wood, paper, &c., and is made into crayons. It is also sometimes used in paints.

Venetian red. Bolus veneta. A kind of *Red ochre*, brought from Venice. It becomes harder and darker coloured by heating.

Sienna. Terra sienna. An argillaceous mineral, of a fine texture, very light, smooth, and glossy, of a yellowish-brown, or coffee-colour: when wetted and drawn over the paper, it leaves a dull orange trace. By calcination it assumes a reddish-brown colour, and is then called *Burnt sienna*. The best sort is brought from Italy, but it is found, of inferior quality, in England, in the neighbourhood of Wycomb.

Ultramarine. Cæruleum ultramontanum. This beautiful and costly pigment is obtained from the mineral Lapis lazuli, which is broken into pieces about the size of a pea, heated to redness, quenched in water, and then ground to a fine powder. To ℔j of this powder is added ℥vj of yellow rosin, ℥ij of common turpentine, ℥ij of bee's-wax, and ℥ij of linseed-oil, previously mixed together, and the whole is made into a mass. This is kneaded in successive portions of luke-warm water, which it colours blue, and from which the ultramarine is subsequently deposited after allowing it to stand for some time. The first water is usually rendered dirty, and is rejected; the second yields the pigment of best quality. The process is founded on the property which the colouring matter of this mineral possesses, of adhering less firmly to the resinous cement used than the foreign matter with which it is associated. The finest specimens of Lapis lazuli are brought from China, Persia, and Great Bucharia.

Ultramarine ashes. Sander's blue. The residue left after the extraction of *Ultramarine*, according to the preceding process; the resinous cement being burned away, and the ashes washed.

Artificial ultramarine. Mix together 1 part of porcelain clay, 1½ part of sulphur, 1 part of anhydrous carbonate of soda, and keep the mixture at a dull red heat, in a covered crucible, as long as vapours are given off. On opening the crucible it will be found to contain a spongy mass, part of which will be of a dark blue colour, and this is to be separated from the other part. The results of this process are not uniform, yet this is considered the best process that has yet been published.

Umber. Terra umbria. Creta umbria. A massive mineral, of a fine pale brown colour, and compact texture; it is soft and dry to the touch, and adheres strongly to the tongue; it assumes a deep brown colour when exposed to heat. According to Klaproth, it consists of 13 parts of silica, 5 of alumina, 48 of oxide of iron, 20 of manganese, and 14 of water, in 100 parts. It is principally brought from the island of Cyprus, and from Turkey.

Burnt umber. The mineral umber exposed to a dull red heat for half an hour, by which the colour is improved. This, as well as the former, is used as a brown colour by painters.

Blue verditer. Refiner's verditer.

1.

The solution of nitrate of copper, obtained by the refiners in precipitating silver from nitric acid by heating it with copper, is poured while hot upon whiting moistened with water, and the mixture stirred until the whole of the copper is precipitated, when more of the nitric solution is added until the desired colour is produced.

2.

The solution of nitrate of copper, as above, is precipitated with lime, which is added in the state of slaked lime. This precipitate, when nearly dry, is triturated with more lime, to develope the velvety blue colour, characteristic of verditer of the best quality. The process is frequently unsuccessful in unskilful hands.

Green verditer, is prepared in much the same way as *Blue verditer*, the difference in the colour resulting from differences in the proportions of the ingredients, or from slight and accidental circumstances not always under the control of the operator.

Alum white. Baume's alum white. Mix ℔ss of honey with ℔j of alum; calcine the mixture in a shallow vessel and heat it to whiteness; wash, dry, and powder the residue, which will be beautifully white, and suitable for use with oil.

White lead. Basic carbonate of lead. Made by exposing sheet lead to the vapour of acetic acid in close chambers. Different varieties of this pigment have been distinguished according to the process by which they have been made. Thus, common vinegar, alegar, molasses vinegar, the refuse water of starch-makers, &c., have been used in the process, and the products distinguished as *Flake white*, *Nottingham white*, *Newcastle white*, *Grace's white lead*, &c.

Wilkinson's white. Made by grinding litharge with sea-water until the whiteness is no longer improved.

Pearl white. Ford's Spanish white. Trisnitrate of bismuth.

Permanent white. Artificial sulphate or carbonate of barytes, made by adding sulphate or carbonate of soda to solution of chloride of barium. This pigment possesses the advantage of not being affected by sulphuretted hydrogen.

Chrome yellow. Chromate of lead. Obtained by precipitating nitrate of lead with chromate of potash.

Indian yellow. This pigment is brought from the East Indies, and is said to be a concretion formed in the intestines of the camel.

King's yellow. Sublimed orpiment, or sulphuret of arsenic.

Naples yellow. (1.) Calcine together ℔jss of lead, ℔j of antimony, ℥j of alum, and ℥j of common salt.

(2.) Mix ℥xij of flake white, ℥ij of diaphoretic antimony, ʒss of calcined alum, and ℥j of salammoniac, and calcine the mixture in a covered crucible, with a moderate heat, for three hours, so that at the end of that time it may be barely red hot.

Patent yellow. Chloride of lead. Grind together 1 part of common salt and 4 parts of litharge with water; expose the mixture for some time to a gentle heat, adding more water from time to time as evaporation takes place. Finally, wash the white chloride of lead which is formed, and heat it until it acquires a fine yellow colour.

Queen's yellow. Turpith mineral, or sub-sulphate of mercury.

LIQUID COLOURS. *Lacca fluida.*

Blue. (1.) Make a strong tincture of litmus with a weak spirit. (2.) To a strong tincture of litmus, made as 1, add a few drops of dilute acetic acid until the colour has become more purely blue. (3.) Dilute Saxon blue, or sulphate of indigo, with water, and neutralize the excess of acid with chalk.

Green. (1.) Dissolve crystallized verdigris in water. (2.) Dissolve sap-green in water, and add a little alum. (3.) Dissolve equal parts of crystallized verdigris and cream of tartar in water, and add a little gum arabic.

Purple. (1.) Add solution of carmine in ammonia to tincture of litmus. (2.) Add a small quantity of alum to a decoction of logwood.

Red. (1.) Boil Brazil wood in dilute acetic acid for a few minutes; strain, and add a little alum and gum arabic. (2.) Add acetic acid to tincture of litmus until it assumes the proper colour. (3.) Dissolve carmine in solution of ammonia, and add water and a little spirit.

Yellow. (1.) Dissolve gamboge in water, and add a little alum and gum arabic. (2.) Dissolve gamboge in equal parts of proof spirit and water. (3.) Boil French berries in water, strain, and add alum and gum arabic. (4.) Make a strong tincture of turmeric. (5.) Dissolve arnotto in a weak ley of potash or soda.

CAKE WATER COLOURS.

These are made by rubbing any of the dry colours with gum-water and a little solution of isinglass, making them into a thick paste, and drying them in a mould.

CAKE OIL COLOURS. The colours are first ground with a weak solution of mastic in oil of turpentine; they are then dried, put on a stone heated by a charcoal fire put under it, and ground with a mixture of 3 parts of spermaceti and 1 part of poppy oil. The paste is afterwards pressed into a mould and allowed to harden.

OIL COLOURS IN BOTTLES. These are prepared in the same way as the cake oil colours, excepting that the spermaceti is omitted, or used in much smaller proportion.

Show colours, for druggists' shop windows.

Blue. (1.) Sulphate of copper ʒj, sulphuric acid ʒss, water ℥x. (2.) Ammonio-sulphate of copper, ammonio-nitrate of nickel, (see 5,) and water. (3.) Prussian blue, gr. x, oxalic acid gr. xx, water ℥xvj. (4.) Dissolve nickel in diluted sulphuric acid, add ammonia in excess, and dilute with water. (5.) Dissolve nickel in diluted nitric acid, add ammonia in excess, and dilute with water. (6.) Dissolve Prussian blue in diluted hydrochloric acid, and dilute with water.

Green. (1.) Sulphate of copper, ʒij, chloride of sodium, ℥iv, water ℥xx. (2.) Dissolve ʒj of nickel in ℥vj of nitric acid, and add Ov of water. (3.) Dissolve nickel in dilute sulphuric acid, and dilute with water. (4.) Dissolve sulphate of copper in water, and add bichromate of potash until the required colour is produced. (5.) Dissolve sulphate of copper in water, and add nitric acid until the required colour is produced. (6.) Dissolve distilled verdigris in acetic acid and dilute it with water.

Lilac. (1.) Dissolve zaffre (impure oxide of cobalt) in hydrochloric acid, filter, and add carbonate of ammonia in excess; to this add ammonio-sulphate of copper until the required colour is produced. (2.) Dissolve zaffre in hydrochloric acid, filter, and add carbonate of ammonia in excess; to this add ammonio-nitrate of nickel (see *Blue*, 5) until the required tint is produced.

Orange. (1.) Dissolve bichromate of potash in water until the required tint is produced. (2.) The same as the last, but adding some oil of vitriol or hydrochloric acid.

Pink. (1.) Dissolve ʒij of zaffre in ℥vj of hydrochloric acid, filter, add solution of carbonate of ammonia in excess, then add fʒj of liquor potassæ, and dilute with water, to produce the required colour. (2.) Nitrate of cobalt may be used, with carbonate of ammonia, in the same way as the last.

Purple. (1.) Sulphate of copper ʒj, carbonate of ammonia ʒiss, water Oiiss. (2.) The last colour, with a small quantity of the *Pink*, 1.

Red. (1.) Macerate powdered cochineal in spirit of hartshorn and dilute it with water. (2.) Dissolve carmine in solution of ammonia and dilute it with water. (3.) Wash the best madder two or three times with cold water, then macerate it in solution of carbonate of ammonia, filter the solution, and dilute it with water. (4.) Dissolve madder lake in solution of carbonate of ammonia.

Violet. Ammonio-sulphate of copper, diluted with water, and enough of the pink colour, 1, to produce the required tint.

Yellow. Bichromate of potash ʒvj, carbonate of potash, ʒiv, water ℥xvj.

CONFECTIO AMYGDALÆ. Lond. Ph. 1836.—*Conserva amygdalarum.* Edin. Ph. 1841.—*Confectio amygdalarum.* Dubl. Ph. 1826.—*Confection of almonds. Conserve of almonds.*

℞ Sweet almonds	℥viij.
Powdered gum arabic	℥j.
White sugar	℥iv.

Blanch the almonds by maceration and peeling, then pound the ingredients together until they become incorporated.

The Lond. Ph. adds, "This confection may be longer kept unchanged, if the almonds, gum acacia, and sugar, separately powdered, are afterwards mixed. Then, whenever the confection is to be used, pound all the ingredients together until incorporated."

CONFECTIO AROMATICA. *Aromatic confection.*

Lond. Ph. 1836.

℞ Cinnamon, Nutmegs, āā	℥ij.
Cloves	℥j.
Cardamoms, husked	℥ss.
Saffron	℥ij.
Prepared chalk	℥xvj.
Sugar	lbij.

Rub the dry ingredients together to a very fine powder and keep them in a close vessel; and whenever the confection is to be used, add water gradually, and mix until incorporated.

Dubl. Ph. 1826.

The same as the London formula, except that lbj of water is directed to be added to the dry ingredients, when the confection is made.

Edin. Ph. 1841. *Electuarium aromaticum.*

℞ Aromatic powder	1 part,
Syrup of orange-peel	2 parts.

Mix them and triturate them into a uniform paste.

This is the modern representative of the old *Confectio Raleighana* and *Confectio cardiaca.*

CONFECTIO AURANTII. *Confection of orange peel.*

Lond. Ph. 1836.

℞ Orange peel, fresh, separated by a rasp	lbj.
Sugar	lbiij.

Pound the peel in a stone mortar with a wooden pestle, then, the sugar being added, pound again until incorporated.

CONSERVA AURANTII. *Conserve of orange peel.*

Edin. Ph. 1841.

Grate off the outer rind of bitter oranges and beat it into a pulp, adding gradually thrice its weight of white sugar.

CONFECTIO CASSIÆ. *Confection of cassia.*

Lond. Ph. 1836.

℞ Cassia pulp	lbss.
Manna	℥ij.
Tamarind pulp	℥j.
Syrup of roses	f℥viij.

Bruise the manna, then dissolve it in

ELECTUARIUM CASSIÆ. *Electuary of cassia.*

Dubl. Ph. 1826.

℞ Pulp of cassia, recently expressed	lbss.
Manna	℥ij.
Pulp of tamarinds	℥j.
Syrup of orange peel	lbss.

Having bruised the manna, dissolve it

the syrup; afterwards mix in the cassia and tamarind pulp, and evaporate the moisture until a proper consistence is attained.

in the syrup with a medium heat, then add the pulps, and let the mixture, by slow evaporation, be reduced to a proper consistence.

CONFECTIO JAPONICA. *Confection of catechu.*

Edin. Ph. 1841. *Electuarium catechu.*

℞	Catechu, Kino, āā	℥iv.
	Cinnamon, Nutmeg, āā	℥i.
	Opium, diffused in a little sherry	ʒiss.
	Syrup of red roses, reduced to the consistence of honey	Oiss.

Pulverize the solids; mix the opium and syrup, then the powders, and beat them thoroughly into a uniform mass.

Dubl. Ph. 1826. *Electuarium catechu compositum.*

℞	Catechu	℥iv.
	Cinnamon	℥ij.
	Kino	℥iij.

Rub to powder, then add

Turkey opium, diffused in a little sherry	ʒiss.
Syrup of ginger, reduced to the consistence of honey	lbij ℥iij.

Mix.

The above formulæ may be considered as the representatives, in our modern Pharmacopœias, of the once celebrated *recipes* for *Confectio Damocratis* and *Theriaca Andromachi.*

CONFECTIO DAMOCRATIS. *Mithridatium. Mithridate, or Damocrates's confection.*

Lond. Ph. 1746.

℞	Cinnamon	ʒxiv.
	Myrrh	ʒxj.
	Agaric, Spikenard (*Nardus indica*), Ginger, Saffron, Seeds of treacle mustard (*Thlaspi arvense*), or Mithridate mustard (*Lepidium campestre*), Frankincense, Chio turpentine, āā	ʒx.
	Camels' hay (*Juncus odoratus*), Costus (*Costus arabicus*), or in its stead Zedoary, Indian leaf (*Malabathrum folium*), or in its stead Mace, French lavender, Long pepper, Seeds of hartwort, Juice of the rape of cistus, Strained storax, Opoponax, Strained galbanum, Balsam of Gilead, or in its stead Expressed oil of nutmegs, Russia castor, āā	ʒj.
	Poley-mountain, Water-germander, Fruit of balsam tree, or in its stead Cubebs, White pepper, Seeds of the carrot of Crete (*Daucus creticus*), Strained bdellium, āā	ʒvij.
	Celtic nard, Gentian root, Leaves of dittany of Crete (*Amaracus dictamnus*), Red roses, Seeds of Macedonian parsley, Seeds of lesser Cardamoms, Seeds of sweet fennel, Gum arabic, Strained opium, āā	ʒv.
	Root of sweet-flag, Root of wild valerian, Aniseed, Strained sagapenum, āā	ʒiij.
	Spignel, St. John's wort, Juice of acacia, or in its stead Catechu, the Bellies of scinks, āā	ʒiiss.
	Clarified honey, three times the weight of all the rest.	

Dissolve the opium first in a little wine, and then mix it with the honey made hot; in the meantime melt together in another vessel the galbanum, storax, turpentine, and other ingredients of this kind, continually stirring them, that they may not burn; and when these are melted add the honey by degrees; last, when the mixture is nearly cold add the rest of the species reduced to powder. (See *Confectio japonica.*)

This confection was reputed to contain the antidote for every known poison.

THERIACA ANDROMACHI. *Venice treacle. London treacle.*

Lond. Ph. 1746.

℞ Troches of squills (Baked squills, ℥ij. ; Flour, ℥j. ; made into lozenges and dried	lbss.
Long pepper, Strained opium, Dried vipers, āā	℥iij.
Cinnamon, Balsam of Gilead, or in its stead Expressed oil of nutmeg, āā	℥ij.
Agaric, Orris root, Water-germander, Red roses, Seeds of navew, Extract of liquorice, āā	℥jss.
Spikenard, Saffron, Greater cardamoms, Myrrh, Costus, or in its stead Zedoary, Camels' hay, āā	℥j.
Cinquefoil root, Rhubarb, Ginger, Indian leaf, or in its stead Mace, Dittany of Crete leaves, Horehound, Calamint, French lavender, Black pepper, Parsley seeds, Olibanum, Chio turpentine, Valerian root, āā	ʒvj.
Gentian root, Celtic nard, Spignel, Poley-mountain, St. John's wort, Ground pine, Creeping germander, Fruit of balsam tree, or in its stead Cubebs, Aniseed, Fennel seed, Lesser cardamoms, Bishop's weed, Hartwort, Treacle mustard, Juice of rape of cistus, Catechu, Gum arabic, Storax, Sagapenum, Lemnian earth, or in its stead Armenian bole, Calcined green vitriol, āā	℥ss.
Creeping birthwort or Long birthwort, Lesser centaury, Carrot of Crete seeds, Opoponax, Strained galbanum, Russia castor, Jews' pitch, or in its stead White amber, Sweet-flag root, āā	ʒij.

Clarified honey, three times the weight of all the rest.

The ingredients are to be mixed in the same manner as in making the Mithridate.

The same efficacy was ascribed to this compound as to the preceding.

CONFECTIO OPII. *Confection of opium.*

Lond. Ph. 1836.

℞ Hard opium, powdered	ʒvj.
Long pepper	℥j.
Ginger	℥ij.
Carraways	℥iij.
Tragacanth powder	ʒij.
Syrup	f℥xvj.

Rub the dry ingredients together to a very fine powder, and keep them in a covered vessel; and whenever the confection is to be used, add f℥xvj. of syrup made hot, and mix.

Dubl. Ph. 1826.

℞ Hard opium, powdered	ʒvj.
Long pepper	℥j.
Ginger	℥ij.
Carraways	℥iij.
Tragacanth powder	ʒij.
Syrup	lbj.

Rub the opium with the syrup made hot, then add the other ingredients, and mix them together.

Edin. Ph. 1841. *Electuarium opii.*

℞ Aromatic powder	℥vj.
Senega, in fine powder	℥iij.
Opium, diffused in a little sherry	℥ss.
Syrup of ginger	lbj.

Mix them together and beat them into an electuary.

The above formulæ may be considered as the representatives, in our modern Pharmacopæias, of the once celebrated recipes for—

PHILONIUM LONDINENSE. *Philonium Romanum. London philonium.*

Lond. Ph. 1746.

℞ White pepper, Ginger, Carraway seeds, āā	℥ij.
Strained opium	ʒvj.
Diacodion (*Syrup of poppies*), boiled to the consistence of honey, three times the weight of all the rest.	

Mix carefully the opium, dissolved first in wine, with the syrup warmed, and then add the other species, reduced to powder. See *Confectio opii.*

CONFECTIO PIPERIS NIGRI. *Confection of Black pepper.*

Lond. Ph. 1836, and Dubl. Ph. 1826.

℞ Black pepper, Elecampane, āā	lbj.
Fennel seeds	lbiij.
Honey, Sugar, āā	lbij.

Rub the dry ingredients together, to a very fine powder, and keep them in a covered vessel; and whenever the confection is to be used, the honey being added, pound them until incorporated. Lond. Ph.

The Dubl. Ph. directs all the ingredients to be mixed at once.

Edin. Ph. 1841. *Electuarium piperis.*

℞ Black pepper,	
Liquorice root, in powder, āā	lbj.
Fennel seeds	lbiij.
Honey,	
White sugar, āā	lbij.

Triturate the solids together into a very fine powder, add the honey, and beat the whole into a uniform mass.

The above confection has long been sold as a *nostrum*, under the name of *Ward's Paste for the Piles*, and has been esteemed an excellent remedy. Ward was originally a footman, and while travelling abroad with his master, is said to have obtained this and other recipes from the monks.

CONFECTIO ROSÆ CANINÆ. *Confection of dog rose or hip. Conserva cynosbati.*

Lond. Ph. 1836. *Conf. rosæ caninæ.*

℞ Dog rose pulp	lbj.
Sugar, powdered	℥xx.

Expose the pulp of the rose in an earthen vessel to a gentle heat; then add the sugar gradually, and rub together until incorporated.

Edin. Ph. 1841. *Conserva rosæ fructus.*

Take any convenient quantity of hips, carefully deprived of their carpels; beat them to a fine pulp, adding gradually thrice their weight of white sugar.

CONFECTIO ROSÆ GALLICÆ. *Confection of red rose.*

Lond. Ph. 1836.

℞ Red rose petals	lbj.
Sugar	lbiij.

Pound the rose petals in a stone mortar; then, the sugar being added, pound them again until incorporated.

Dubl. Ph. 1826. *Conserva rosæ.*

The same as the Lond. Ph. 1836.

Edin. Ph. 1841. *Conserva rosæ.*

Beat the petals of the rosa gallica to a pulp, gradually adding twice their weight of white sugar.

CONFECTIO RUTÆ. *Conserva rutæ.* *Conserve of rue.*

Lond. Ph. 1836. Dubl. Ph. 1826.

℞ Leaves of rue, Carraway seeds, Laurel berries, āā	℥iss.
Sagapenum	ʒss.
Black pepper	ʒij.
Clarified honey	℥xvj.

Rub the dry ingredients together to a very fine powder and preserve them. Then, whenever the confection is to be used, add the honey to them, and mix them all. Lond. Ph.

The Dubl. Ph. directs the whole to be mixed at once.

CONFECTIO SCAMMONII. *Confection of scammony.*

Lond. Ph. 1836.

℞ Scammony, powdered	℥jss.
Cloves, bruised,	
Ginger, powdered, āā	ʒvj.
Oil of carraway	fʒss.
Syrup of rose	q. s.

Rub the dry ingredients together to very fine powder, and preserve them; then when the confection is required for use, the syrup being gradually poured in, rub again; lastly, the oil of carraway being added, mix them all.

Dubl. Ph. 1826. *Electuarium scammonii.*

℞ Scammony, in powder	℥jss.
Cloves, bruised,	
Powder of ginger, āā	ʒvj.
Oil of carraway	ʒss.
Syrup of roses	q. s.

Drop the syrup on the powders, then add the oil of carraway, and mix all together.

CONFECTIO SENNÆ. *Confection of senna.* (L.)

Lond. Ph. 1836.

℞ Senna	℥viij.
Figs	lbj.
Tamarind (pulp),	
Cassia (pulp),	
Prunes (pulp), āā	lbss.
Coriander	℥iv.
Liquorice	℥iij.
Sugar	lbijss.
Water	Oiij.

Rub the senna with the coriander, and by a sieve separate ten ounces of the mixed powder. Then boil down the water, with the figs and the liquorice added, to one-half; afterwards press out [the liquor] and strain it. Evaporate

Edin. Ph. 1841. *Electuarium sennæ.*

℞ Senna	℥viij.
Coriander	℥iv.
Liquorice-root, bruised	℥iij.
Figs	lbj.
Pulp of prunes	lbj.
White sugar	lbijss.
Water	Oiij ¼

Powder the senna and coriander; sift out ten ounces of the mixture; boil the residue with the figs and liquorice, in the water down to one-half; express and strain the liquor, and evaporate it to twenty-four ounces; dissolve in this the sugar, and add the liquid by degrees to the strained liquor in a water-bath, until of the whole, twenty-four fluidounces remain; then, the sugar being added, let the syrup be made. Lastly, rub the pulps gradually with the syrup, and the sifted powder being thrown in, mix them all.

the pulp of prunes; mix gradually the powder, and triturate the whole carefully to a uniform pulp.

Dubl. Ph. 1826. *Electuarium sennæ.*

℞	Senna-leaves, reduced to a very fine powder	℥iv.
	Pulp of prunes	lbj.
	Pulp of tamarinds	℥ij.
	Treacle	Ojss.
	Essential oil of carraway	ʒij.

Boil the pulp in the syrup to the thickness of honey; then add the powder, and when the mixture has grown cold, add the oil; lastly, mix all well together.

Med. use. An efficient yet mild purgative. *Dose* ʒj. to ʒij.

CORNU USTUM. *Burnt horn.*

Lond. Ph. 1836.

Burn fragments of horns in an open vessel, until they become entirely white; then pulverise, and prepare them in the same manner as was directed concerning chalk.

Note.—When this has been well burnt, it is almost entirely dissolved in nitric acid; then lime is separated by oxalate of ammonia, whilst phosphoric acid is separated by nitrate of lead.

CRAYONS.

Soft, fine-grained charcoal, such as that from the wood of the willow, is cut into pieces of the required size; these are put into a pipkin with melted wax, and kept over a slow fire for half an hour. They are then taken out and drained on blotting-paper in a warm place. Red, black, or other coloured chalk, may be treated in the same way.

CREASOTON. *Creasote.*

A colourless, transparent liquid, of high refractive power. Sp. gr. 1.037 to 1.06. Boiling point 397° Fahr. It dissolves in about 80 or 100 parts of water, and is very soluble in alcohol and in acetic acid. It possesses powerful antiseptic properties. It is obtained by distilling tar, when an oil passes over containing a good deal of creasote mixed with other substances; from these it is separated by adding carbonate of potash to saturate any acid present; the oil is then distilled with water, treated with dilute sulphuric acid to separate ammonia, again distilled, the oily product treated with caustic solution of potash of sp. gr. 1.12, which dissolves the creasote. This alkaline solution is supersaturated with diluted sulphuric acid, and the impure creasote which separates, is purified by repeated distillation and treatment with caustic potash and diluted sulphuric acid.

CRETA. *Chalk.*

Impure carbonate of lime.

CRETA PRÆPARATA. *Prepared chalk.*

Lond. Ph. 1836. Edinb. Ph. 1841. And Dubl. Ph. 1826

The process is essentially the same in all the British Pharmacopœias; the following is that of the Lond. Ph.

Take of chalk lbj; water, as much as may be sufficient. Add a little water to the chalk, and rub it that it may become fine powder. Put this in a large vessel with the rest of the water; then stir it, and after a short interval, pour off the supernatant water, still turbid, into another vessel, and set it by that the powder may subside; lastly, the water being poured off, dry this powder and keep it for use.

In the same way shells, first freed from impurities and washed with boiling water, are prepared.

CRETA GALLICA. *French chalk. Steatite. Soap-stone.*

A soft magnesian mineral; a species of indurated talc, consisting of about 66 parts silica, 30 parts magnesia, and 4 parts oxide of iron.

CUP, ANTIMONIAL. *Emetic cup.*

A small cup made of metallic antimony was formerly used for preparing emetic wine, by leaving wine in it for 12 hours.

CUP, CHINESE PURGING.

Made of red sulphuret of arsenic; wine left in it over night, was drank in the morning as a purge.

CUPRUM. *Copper.* Symbol Cu. Equivalent 32.

This metal occurs abundantly in Cornwall, in combination with sulphur. Alloyed with about 30 *per cent.* of zinc it forms *Brass.* Alloyed with different proportions of tin, it forms *Gun-metal*, *Bell-metal*, and *Speculum-metal;* and with zinc and tin, it forms *Bronze.*

CUPRI AMMONIO-SULPHAS. *Ammonio-sulphate of copper.*

Lond. Ph. 1836.

℞ Sulphate of copper . . ℥j.
Sesquicarbonate of ammonia ℥jss.

Rub them together until carbonic acid ceases to evolve; then dry the ammonio-sulphate of copper, wrapped in bibulous paper in the air.

Note.—By heat it is converted into oxide of copper, evolving ammonia. Dissolved in water it changes the colour of turmeric, and solution of arsenious acid renders it of a green colour.

Edin. Ph. 1841. } *Cuprum ammoniatum.*
Dubl. Ph. 1826. }

℞ Sulphate of copper . . ℥ij.
Carbonate of ammonia . ℥iij.

Triturate them thoroughly together, till effervescence ceases, wrap the product in blotting-paper, and dry it first by folds of blotting-paper, afterwards by exposure to the air for a little; and preserve it in closely-stopped bottles.

Note.—This is sulphate of copper and ammonia: *ammoniacal sulphate of copper.* (Edin. Ph.)

Liquor cupri ammonio-sulphatis, Lond. Ph. 1836. *Cupri ammoniati solutio*, Edin. Ph. 1841. *Cupri ammoniati aqua*, Dubl. Ph. 1826.

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Ammonio-sulphate of copper .	ʒj.
	Distilled water . .	Oj.

Dissolve the ammonio-sulphate of copper in the water, and strain.

Dubl. Ph. 1826.

℞	Ammoniated copper .	1 part.
	Distilled water . .	100 parts.

Dissolve the ammoniated copper in the water, and filter it through paper.

Cupri diniodidum. *Diniodide of copper.* Symbol $Cu^2 I$.

Dissolve 1 part of sulphate of copper, and 3 parts of sulphate of iron, in distilled water, and add a solution of iodide of potassium as long as a precipitate is formed. Wash this precipitate, and dry it with a gentle heat. It is of a dirty white colour.

If sulphate of copper alone be used, only one-half of the iodine is precipitated, the other half being set free, as no proto-iodide of copper exists.

Curry powder.

		No 1. (good)	No. 2.	No. 3.
℞	Turmeric powder . .	℥vj.	℥v.	℥viij.
	Coriander-seed powder .	℥viij.	℥iij.	℥iv.
	Black pepper . .	℥iv.	ʒj.	ʒj.
	Fænugreek . .	℥ij.		
	Ginger . . .	℥ij.	ʒj.	
	Cayenne pepper . .	℥ss.	ʒj.	ʒj.
	Cummin-seed . .	℥ss.		
	Scorched mustard .		℥ij.	℥ss.
	Mace . . .		ʒij.	ʒj.
	Cinnamon . .			ʒj.
	Cardamoms . .			ʒij.
		Mix.	Mix.	Mix.

Damson cheese.

Boil damson fruit with a small quantity of water, and afterwards rub the pulp through a sieve. To each pound of this pulp add a quarter of a pound of sugar, and boil them together until the mixture, on cooling, becomes firm.

Decoctum aloes compositum. Lond. and Dubl. **Decoctum aloes.** Edin. *Compound decoction of aloes.*

Lond. Ph. 1836.

℞	Extract of liquorice . .	ʒvij.
	Carbonate of potash .	ʒj.
	Aloes, powdered,	
	Myrrh, powdered,	
	Saffron, āā . . .	ʒiss.
	Compound tincture of cardamoms . . .	f℥vij.
	Distilled water . .	Ojss.

Boil down the liquorice, carbonate of potash, aloes, myrrh, and saffron, with the water, to a pint, and strain; then add compound tincture of cardamom.

Edin. Ph. 1841.

℞	Socotrine or Hepatic aloes,	
	Powder of myrrh,	
	Saffron, āā . . .	ʒj.
	Extract of liquorice . .	℥ss.
	Carbonate of potash .	℈ij.
	Compound tincture of cardamoms . . .	f℥iv.
	Water	f℥xvi.

Mix the aloes, myrrh, saffron, liquorice, and carbonate of potash with the water; boil down to 12 ounces; filter, and add the compound tincture of cardamoms.

Dubl. Ph. 1826.

℞	Extract of liquorice . . .	℥ss.
	Carbonate of potash . . .	℈ij.
	Hepatic aloes, bruised,	
	Saffron, Myrrh, āā . . .	ʒi.
	Water	℥xvj.

Boil them together down to 12 ounces, then strain, and add 4 ounces of compound tincture of cardamoms.

Med. use. This is a warm yet gentle cathartic, useful in habitual costiveness, dyspepsia, jaundice, and chlorosis. *Dose.* from one to two ounces.

Decoctum altheæ. *Decoction of marshmallow.*

Dub. Ph. 1826.

℞	Herb and root of marshmallow, dried and bruised .	℥iv.
	Raisins, stoned	℥ij.
	Water	Ovij.

Boil down to 5 pints. Having strained the liquor, set it aside until the fœces have subsided, and decant.

Decoctum amyli. *Decoction of starch.*

Lond. Ph. 1836.

℞ Starch, ʒiv.; Water, Oj. Rub the starch with the water gradually poured in, then boil a little while.

Decoctum avenæ. *Gruel.*

Mix ℥j of oatmeal or groats with ℥iv of cold water, then add Oiij of boiling water. Boil for an hour, and strain through a hair sieve.

DECOCTUM CETRARIÆ. Lond. DECOCTUM LICHENIS ISLANDICI. Dubl. *Decoction of liverwort.*

Lond. Ph. 1836.

℞ Liverwort . . . ʒv.
Water . . . . Ojss.
Boil down to a pint.

Dubl. Ph. 1826.

℞ Iceland liverwort . . ℥ss.
Water . . . . ℥xvj.
Digest for two hours in a covered vessel, then boil for a quarter of an hour, and strain the liquor while hot.

DECOCTUM CHAMÆMELI COMPOSITUM. *Compound decoction of chamomile.*

Dubl. Ph. 1826.

℞ Chamomile flowers, dried . . . ℥ss.
Fennel seeds . . . . . ʒij.
Water . . . . . . ℥xvj.
Boil for a short time and strain.

Med. use. As an enema, or a fomentation.

DECOCTUM CHIMAPHILÆ. *Decoction of wintergreen or pyrola,* L. *Decoctum pyrolæ,* D.

Lond. Ph. 1836.

℞ Wintergreen or pyrola . ℥i.
Distilled water . . Oiss.
Boil down to a pint, and strain.

Dubl. Ph. 1826.

℞ Wintergreen . . . ℥i.
Water . . . . Oij.
Macerate for six hours, then take out the wintergreen, and having bruised it, return it to the liquor, and evaporate the mixture until there remains enough to afford a pint of liquor strained with expression.

Med. use. Diuretic, tonic, and occasionally laxative, and has been found very useful in dropsy combined with great debility. *Dose.* Two or three ounces three or four times a day.

DECOCTUM CINCHONÆ. *Decoction of cinchona bark.*

Edin. Ph. 1841.

℞ Crown, gray, yellow, or red cinchona, bruised . ℥j.
Water . . . f℥xxiv.
Boil for ten minutes, let the decoction cool, then filter it, and evaporate to f℥xvj.

Dubl. Ph. 1826.

℞ Lance-leaved cinchona bark, coarsely powdered . . ℥j.
Water, a sufficient quantity to afford 16 ounces after straining.

DECOCTUM CINCHONÆ CORDIFOLIÆ. *Decoction of heart-leaved cinchona.*

Lond. Ph. 1836.

℞ Heart-leaved cinchona, bruised . . . ʒx.
Distilled water . . . . . Oj.
Boil for ten minutes in a lightly-covered vessed, and strain the liquor while hot.

Decoctum cinchonæ lancifoliæ. *Decoction of lance-leaved cinchona.* Lond. Ph. 1836.

Decoctum cinchonæ oblongifoliæ. *Decoction of oblong-leaved cinchona.* Lond. Ph. 1836.

These are made in the same way as *Decoctum cinchonæ cordifoliæ*, only substituting *pale* or *red* bark for the *yellow* bark.

Decoctum cornus floridæ. *Decoction of dogwood.*

U. S. Ph. 1840.

℞ Dogwood bark, bruised, ℥j.; Water, Oj. Boil for ten minutes in a covered vessel, and strain the liquor white hot.

Dose. Two fluidounces. Given as a tonic; and has been recommended as a substitute for Peruvian bark.

Decoctum cydoniæ. *Decoction of quince* [seeds]. L.

Lond. Ph. 1836.

℞ Quince [seeds], ʒij.; Distilled water, Oj.
Boil with a slow fire for ten minutes; afterwards strain.

Med. use. As an application to erysipelatous surfaces; in aphthous affections and excoriations of the mouth.

Decoctum digitalis. *Decoction of foxglove.*

Dubl. Ph. 1807.

℞ Dried foxglove, ʒj.; Water, sufficient to produce f℥viij. of the decoction. Set it on a slow fire, and when it begins to boil remove it; let it digest for fifteen minutes, and strain.

Decoctum dulcamaræ. *Decoction of woody nightshade.*

Lond. Ph. 1836.

℞ Woody nightshade, sliced .	ʒx.
Distilled water. . . .	Ojss.

Boil down to a pint and strain.

Edin. Ph. 1841.

℞ Dulcamara, chopped down	℥j.
Water	f℥xxiv.

Mix them, boil, and concentrate by evaporation to 16 fluidounces.

Dubl. Ph. 1826.

℞ Twigs of woody nightshade, sliced, ℥j.; Water, Ojss.
Boil down to a pint and strain.

Med. use. Diuretic and narcotic. *Dose.* From fʒiv. to f℥j. three times a day.

Decoctum granati. *Decoction of pomegranate.*

Lond. Ph. 1836.

℞ Pomegranate (rind), ℥ij.; Distilled water, Ojss.
Boil down to a pint and strain.

Med. use. Astringent, f℥ss. to f℥i., in dysentery.

DECOCTUM GEOFFROYÆ INERMIS. *Decoction of cabbage tree.*

Dubl. Ph. 1826.

℞ Bark of the cabbage tree, bruised, ℥j.; Water, Oij.

Boil down to a pint, and to the strained liquor add 2 ounces of syrup of orange peel.

Med. use. Cathartic and sedative. Chiefly used for the expulsion of lumbrici. *Dose.* From f℥ss. to f℥ij.

DECOCTUM GLYCYRRHIZÆ. *Decoction of liquorice.*

Dubl. Ph. 1826.

℞ Liquorice root, bruised, ℥iss.; Water, Oj.

Boil for ten minutes and strain.

Med. use. A demulcent vehicle for other remedies.

DECOCTUM GUAIACI. *Decoction of guaiac.* E. *Decoctum guaiaci compositum. Compound decoction of guaiacum.* D.

Edin. Ph. 1841.

℞	Guaiac turnings	℥iij.
	Raisins	℥ij.
	Sassafras, rasped, and	
	Liquorice root, bruised, āā	℥j.
	Water	Oviij.

Boil the guaiac and raisins with the water gently down to five pints, adding the liquorice and sassafras towards the end. Strain the decoction.

Dubl. Ph. 1826.

℞	Guaiac wood, scraped	℥iij.
	Sassafras root, sliced	ʒx.
	Liquorice root, bruised	℥ijss.
	Water	Ox.

Boil the guaiac wood in the water, and evaporate the liquor to one-half: towards the conclusion of the boiling add the liquorice and the sassafras, and strain the liquor.

Med. use. In chronic rheumatism, and certain skin diseases. *Dose.* From ℥iv. to ℥xvi. in the course of the day.

DECOCTUM HÆMATOXYLI. *Decoction of logwood.*

Edin. Ph. 1841.

℞	Logwood, in chips	℥j.
	Water	Oj.
	Cinnamon, in powder	ʒj.

Boil the logwood in the water down to 10 fluidounces, adding the cinnamon towards the end, and then strain.

Dubl. Ph. 1825.

℞	Shavings of logwood	℥jss.
	Cinnamon bark, bruised	ʒj.
	Water	Oij.

Boil the wood in the water, and evaporate the liquor to a pint: towards the end of the boiling add the cinnamon bark and strain.

Med. use. Astringent. Useful in diarrhœa and dysentery. *Dose.* ℥i. to ℥iij.

DECOCTUM HORDEI. *Decoction of barley.*

Lond. Ph. 1836.

℞ Barley (pearl barley), ℥ijss; Water, Oivss.

First wash away with water the foreign matters adhering to the barley seeds; afterwards, half a pint of the water being poured upon them, boil the seeds a little while. This water being thrown away, pour on [the seeds] that which is left, first made hot; then boil down to two pints and strain.

Dubl. Ph. 1826.

℞ Seeds of the barley, freed from their husks, ℥ij.

Having first cleaned the barley in cold water, boil it for a short time in half a pint of water, then, throwing away the liquor, put the barley into 5 pints of boiling water. Boil until half the water is consumed, and strain.

Med. use. As a diluent in fevers and acute diseases. *Dose.* Ad libitum.

DECOCTUM HORDEI COMPOSITUM. *Compound decoction of barley.*

Lond. Ph. 1836.

℞	Decoction of barley	Oij.
	Figs, sliced	℥ijss.
	Liquorice root, bruised	ʒv.
	Raisins (stoned)	℥ijss.
	Water	Oj.

Boil down to 2 pints, and strain.

Dubl. Ph. 1826.

℞	Decoction of barley	Oiv.
	Raisins, stoned,	
	Figs, sliced, āā	℥ij.
	Liquorice root, bruised	℥ss.

During the boiling add the raisins first, then the figs, and lastly the liquorice, a little before the conclusion of the boiling, which is completed when there remains only what will afford 2 pints of strained liquor.

Med. use. A useful demulcent in fever, phthisis, gonorrhœa, and strangury. *Dose.* Ad libitum.

DECOCTUM MALVÆ COMPOSITUM. *Compound decoction of mallow.*

Lond. Ph. 1836.

℞	Mallow, dried	℥j.
	Chamomile, dried	℥ss.
	Water	Oj.

Boil for a quarter of an hour and strain.

DECOCTUM MEZEREI. *Decoction of mezereon.*

Edin. Ph. 1841.

℞	Mezereon, in chips	ʒij.
	Liquorice root, bruised	℥ss.
	Water	Oij.

Mix them, and boil down with a gentle heat to a pint and half, and then strain.

Dubl. Ph. 1826.

℞	Bark of mezereon	ʒij.
	Liquorice root, bruised	℥ss.
	Water	Oiij.

Boil down to 2 pints, and strain.

Med. use. As a sudorific in secondary syphilis and chronic rheumatism. *Dose.* From f℥iv. to f℥vi.

DECOCTUM PAPAVERIS. *Decoction of poppy.*

		Lond.	Edin.	Dubl.
℞	Poppy capsules, broken	℥iv.	℥iv.	℥iv.
	Water	Oiv.	Oiij.	Oij.
	Boil for	¼ hour, & strain	¼ hour, & strain	¼ hour, & strain

Med. use. As an anodyne fomentation.

Decoctum quercus. *Decoction of oak bark.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Oak bark, bruised . ʒx.
Water . . . Oij.
Boil down to a pint, and strain.

Dubl. Ph. 1826.

℞ Oak bark . . ℥j.
Water . . . Oij.
Boil to a pint, and strain.

Med. use. Chiefly as a local astringent in the forms of gargle, lotion, or injection: as a gargle in relaxation of the uvula and in cynanche; as an injection in prolapse of the vagina, uterus, or rectum; it has been found serviceable when given internally in obstinate diarrhœas, and alvine hæmorrhages. *Dose.* ℥j. to ℥ij.

Decoctum sarzæ. *Decoction of sarza*, L. E. *Decoctum sarsaparilla*, D.

Lond. Ph. 1836.

℞ Sarza, sliced . . ℥v.
Distilled water, boiling . Oiv.
Macerate for four hours, in a lightly covered vessel, near the fire, then take out and bruise the sarza. When bruised, return it to the liquor, and again macerate in like manner for two hours; then boil down to two pints, and strain.

Edin. Ph. 1841.

℞ Sarza, in chips . ℥v.
Boiling water . . Oiv.
Digest the root in the water for two hours at a temperature somewhat below ebullition, take out the root, bruise it, replace it, boil down to two pints, and then squeeze out the decoction, and strain it.

Dubl. Ph. 1826.

℞ Sarsaparilla root, sliced, and cleansed with cold water . ℥iv.
Boiling water . . . . . Oiv.
Digest with a medium heat for four hours in a vessel lightly covered, then take out the sarsaparilla and bruise it; and having done so, return it into the liquor, boil down to two pints, and strain.

Med. use. Alterative and demulcent. *Dose.* From f℥iv. to f℥viij. three or four times a-day.

Decoctum sarzæ compositum. *Compound decoction of sarza*, L. E. *Decoctum sarsaparillæ comp.*, D.

Lond. Ph. 1836.

℞ Decoction of sarza, boiling hot . . . Oiv.
Sassafras, sliced,
Guaiacum wood, rasped,
Liquorice [root] bruised, āā . . . ʒx.
Mezereon [bark of the root] . . . ʒiij.
Boil for a quarter of an hour, and strain.

Edin. Ph. 1841.

The same as the London, except that half an ounce of mezereon is ordered.

Dubl. Ph. 1826.

Decoction of sarsaparilla, boiling hot . .	Oiv.
Sassafras root, sliced and bruised,	
Guaiac wood, scraped,	
Liquorice root, bruised, āā	℥j.
Bark of mezereon root	ʒiij.

Boil for a quarter of an hour, and strain.

Med. use. Diaphoretic and alterative; used in the treatment of secondary syphilis, chronic rheumatism, lepra, and other cutaneous affections. *Dose.* f℥iv. to f℥vj. three times a day.

Decoctum scoparii compositum. *Compound decoction of broom*, L. *Decoctum scoparii*, E.

Lond. Ph. 1836.

℞ Broom [fresh tops],	
Juniper fruit,	
Dandelion [root], āā .	℥ss.
Distilled water . .	Oiss.

Boil down to a pint, and strain.

Edin. Ph. 1841.

℞ Broom-tops, and	
Juniper-tops, āā .	℥ss.
Bitartrate of potash .	ʒijss.
Water . . .	Ojss.

Boil them together down to a pint, and then strain.

Med. use. As a diuretic in dropsy. *Dose.* f℥j. to f℥iv., three or four times a day.

Decoctum senegæ. *Decoction of senega.*

Lond. Ph. 1836.

℞ Senega . .	ʒx.
Distilled water .	Oij.

Boil down to a pint, and strain.

Dubl. Ph. 1826.

℞ Senega . . .	ʒiij.
Water . . .	Ojss.

Boil down to eight ounces, and strain.

Med. use. A stimulating expectorant, in chronic bronchitis; it also acts as a diuretic; in large doses it is emetic and cathartic. *Dose.* f℥j. to f℥iij., three or four times a day.

Decoctum secalis cornuti. *Decoctum ergoti. Decoction of ergot of rye.*

℞ Ergot of rye, ʒj.; water, ℥vj. Boil for ten minutes in a lightly covered vessel, and strain.

Dose. One-third the above every half-hour until the whole is taken. In parturition. (Pereira.)

DECOCTUM TARAXACI. *Decoction of taraxacum.*

Edin. Ph. 1841.

℞ Taraxacum, herb and root, fresh	℥vij.
Water	Oij.

Boil together down to one pint, and then strain.

Dubl. Ph. 1826.

℞ Fresh herb and root of dandelion	℥iv.
Water	Oij.

Boil down to a pint, and strain the expressed liquor.

Med. use. Tonic in chronic diseases of the digestive apparatus; it also acts as a purgative. *Dose.* f℥j. to f℥iij.

DECOCTUM TORMENTILLÆ. *Decoction of tormentil.*

Lond. Ph. 1836.

℞ Tormentil, bruised	℥ij.
Distilled water	Ojss.

Boil down to a pint, and strain.

Med. use. An astringent and tonic in chronic diarrhœa. *Dose.* f℥j. to f℥iij., three or four times a day.

DECOCTUM ULMI. *Decoction of elm* (bark).

Lond. Ph. 1836.

℞ Elm [bark], fresh, bruised	℥ijss.
Distilled water	Oij.

Boil down to a pint, and strain.

Dubl. Ph. 1826.

℞ Fresh inner bark of elm, bruised	℥ij.
Water	Oij.

Boil down to a pint, and strain.

Med. use. Formerly employed in certain forms of skin disease, as in herpetic eruptions. *Dose.* f℥iv. to f℥vj. three times a day.

DECOCTUM UVÆ URSI. *Decoction of whortleberry.*

Lond. Ph. 1836.

℞ Whortleberry (leaves), bruised	℥j.
Distilled water	Ojss.

Boil down to a pint, and strain.

Med. use. A tonic, much recommended in affections of the urinary organs.

DECOCTUM VERATRI. *Decoction of white hellebore.*

Lond. Ph. 1836.

℞ White hellebore [root], bruised	ʒx.
Distilled water	Oij.
Rectified spirit	f℥iij.

Boil the hellebore in the water down to a pint, and when it has cooled, add the spirit, then press and strain.

Dubl. Ph. 1826.

℞ Root of white hellebore, powdered	℥j.
Water	Oij.
Rectified spirit, *by measure*	℥ij.

Add the hellebore root to the water, boil it down to a pint, and when it has grown cold add the spirit.

Med. use. Used only externally as a lotion in scabies, tinea capitis, and other cutaneous diseases.

DECOCTUM ZITTMANNI. *Zitmann's decoction.*

Pruss. Ph.

℞ Sarsaparilla, ℥xij; spring water. lbxc; digest for twenty-four hours; then introduce, enclosed in a small bag, ℥jss of saccharine alum, (a paste composed of alum ℥vj, white lead ʒvj, sulphate of zinc ʒiij, white sugar ℥jss, white of egg and water sufficient to form a paste); ℥ss of calomel; ʒj of cinnabar. Boil to thirty pounds, and near the end of the boiling add, of aniseed, fennel seed, each ℥ss, senna ℥iij, liquorice root ℥jss. Put aside the liquor, and call this "*The strong decoction.*"

To the residue add ℥vj of sarsaparilla, and lbxc. of water. Boil to thirty pounds, and near the end of the boiling add, of lemon-peel, cinnamon, cardamoms, liquorice, each ʒiij. Strain, and call this "*The weak decoction.*"

A very small portion of mercury was detected in this decoction by Wiggers. It may be drank freely, and has been given with advantage in similar cases to those in which our decoction of sarsaparilla is administered.

DENTIFRICE. From *dens*, a tooth; and *frico*, I rub.

Tooth Powders.

1.

℞ Precipitated chalk . . ℥j.
Powdered camphor . . ʒij.
Mix. This should be kept in a bottle.

2.

℞ Powdered Castile soap,
„ Orris-root, āā . ℥ij.
„ Cuttle-fish bone,
Prepared chalk, āā . . ℥iij.
Oil of cloves,
Essence of lemons, āā . gtt. xx.
Mix.

3.

℞ Powdered cuttle-fish bone,
Prepared chalk, āā . . lbj.
Powdered orris-root . . lbss.
„ Dragon's blood . ℥j.
Oil of cloves,
Essence of lemons, āā . ʒj.
Carmine or lake, q. s. to colour it.
Mix.

4.

℞ Cream of tartar . . ℥ij.
Alum . . . . ʒj.
Powdered cochineal . ℈ij.
Essence of roses . . ʒss.
Mix.

5.

℞ Powdered talc, or French chalk . . . ℥ij.
Bicarbonate of soda . ℥ss.
Essence of roses . . ʒss.
Mix.

6.

℞ Cream of tartar . . ℥ij.
Powdered orris-root . ℥j.
„ Myrrh . . ʒss.
Dragon's blood . . ʒss.
Mix.

7.

℞ Powdered bark . . ℥j.
„ Myrrh,
„ Rhatany-root,
„ Orris-root, āā . ʒss.
Mix.

8.

℞ Powdered charcoal . ℥ij.
„ Bark,
„ Myrrh, āā .
Mix.

Tooth Pastes.

1.

℞ Precipitated chalk . .	℥j.
Powdered myrrh,	
„ Rhatany-root, āā	ʒij.
„ Orris-root .	ʒj.

Honey of roses, q. s. to form a paste.

2.

℞ Cream of tartar . .	℥j.
Powdered orris-root,	
„ Red roses, āā .	℥ss.
Oil of cloves . .	gtt. x.

Honey of roses, q. s. to form a paste.

DEPILATORY. (From *de*, of; and *pilus*, the hair.) Any application for removing hair from the skin. The use of most of the preparations sold for this purpose is attended with some danger.

1. *Colley's Depilatory.*

℞ Quick lime . .	30 parts
Orpiment . .	12 „
Sulphur . . .	4 „
Nitre . . .	4 „
Soap lees . . .	125 „

Evaporate to the consistence of cream.

This requires to be used with the greatest possible care. It is a powerful caustic, and destroys the texture of the hair, but acts with equal energy on the skin.

2. *Delcroix's Depilatory.*

℞ Quick lime . .	30 parts
Orpiment . .	4 „
Powdered gum . .	60 „

Mix.

This should be kept in a closely stopped bottle; when used, it should be mixed with water, so as to form a paste, which is applied to the hair, and allowed to remain there for five or ten minutes, when the hair is removed with the back of a knife. The proportion of orpiment is sometimes increased.

3. *Plenck's Depilatory.*

℞ Quick lime . . .	16 parts
Orpiment . . .	1 „
Starch	10 „

Mix, and keep in a closely stopped bottle. This is used in the same way as *Delcroix's Depilatory.*

4. *Turkish Rusma.*

℞ Quick lime . . .	8 parts
Orpiment . . .	1 „

Mix with white of egg and soap-lees, so as to form a paste, which is to be used in the same way as 2 or 3.

5.

The best and safest *Depilatory* is a strong solution of sulphuret of barium, made into a paste with powdered starch, and used in the same way as 2.

This should be used soon after mixing it, as it loses its efficacy if long kept.

DEXTRINE. *British gum.*

A substance possessing some of the properties of gum, for which it is, in some cases, substituted. It is a product resulting from the action of heat, diastase, or dilute acids, on starch. For use in the arts, it is generally obtained by exposing dry potato-starch to a temperature of about 400° Fahr., until it has acquired a yellowish tint, and has become soluble in cold water. The name *Dextrine* is taken from its action on a ray of polarized light, the plane of which it turns towards *the right-hand.*

DIACODION. *Diacodium. Syrupus e Meconio.* (From δια, and κωδια, a poppy-head.) Old names for syrup of poppies.

DIAGRYDIUM. Corrupted from *Diacrydium*, or Scammony.

DIAPENTE. *Pulvis diapente.* (From δια, and πεντε, five.) A tonic powder given to horses. Literally, a medicine composed of five ingredients.

1.

℞ Gentian, Bay-berries, Aristolochia-root, Myrrh, and Ivory-dust, of each, equal parts. (Edin. Ph. 1744.)

2.

℞ Turmeric powder, ℔iv.; Gentian powder, ℔ij.; Bay-berries, ℔ij.; Mustard, ℔iij. Mix.

3.

℞ Gentian powder, ℔iv.; Bay-berries, ℔ss. Mix.

This last is the formula most frequently adopted.

DIASCORDIUM. (From δια, and σκορδιον, the water germander.) *Electuarium e scordio.*

This electuary, which was formerly in high repute as an antipestilential, has been replaced by the Electuarium catechu.

DIVIDIVI. *Libidibi, Libidivi.*

The leguminous fruit of *Cæsalpinia coriaria*, much used by tanners on account of the tannin it contains. (See page 279.)

DRAGES. *Drageés. Sugar-plums.*

This, as a method of administering medicines, is of comparatively recent introduction. There are several different kinds of *Drages*, or *Sugar-plums.*

1st. *Drages, the centres or nuclei of which are almonds, or some seeds or fruit.*

In making these, a copper pan, of a hemispherical form, is suspended from the ceiling by a cord attached to the two handles, over a furnace or charcoal fire. The pan is first slightly warmed; and the almonds or seeds being put in, a portion of syrup is added, and the whole rubbed together with the hand of the operator, until each seed is covered with a coating of syrup; powdered sugar, or starch, or a mixture of the two, is then sprinkled over them, and this is equally distributed over the surface of each seed by giving a dexterous motion to the pan. The *Drages* are then put on to a sieve and dried in a stove. The process is repeated until the coating of sugar or starch is sufficiently thick. This method does not succeed well unless several pounds of ingredients be put into the pan at a time. Ten or twelve pounds is a good quantity to operate upon.

2nd. *Drages, the centres or nuclei of which are pills or boluses.*

These are made in the same way as the preceding. Pills or boluses of copaiba solidified with hydrate of lime or magnesia, are sometimes coated in this way.

3rd. *Drages, the centres or nuclei of which consist of a liquid.* The following is the ingenious method by which these are made:—A tray is filled with finely-powdered starch, the surface of which is made smooth and even, and impressions are made in the starch by means of a mould, representing the form of the intended *Drages;* a syrup is then prepared with the best white sugar, which is concentrated by boiling to a point midway between that required for barley-sugar and ordinary syrup; this is removed from the fire while boiling, and a small quantity of flavoured spirit, containing no acid, is added without stirring the syrup, the renewed ebullition which this addition occasions causing sufficient admixture of the ingredients; the syrup thus prepared, as soon as the ebullition has ceased, is poured into the cavities in the starch, and some more powdered starch being sprinkled over the surface, the tray is put into a warm place, that the syrup may crystallize; after an hour or two the crystallized sugar will be found to have formed a perfect shell to each of the *drages*, while the uncrystallized sugar and the spirit are enclosed in their centres.

4th. *Drages, which have no separate nucleus.*

In making these the suspended pan is used, as in the 1st and 2nd, but powdered sugar is substituted for the nuclei employed in those cases. *Nonpareils* and *Homeopathic globules* are made, in this way.

DRAGEES MINERALES. *Drages for extemporaneously preparing artificial mineral waters.*

Dry tartaric acid and sesquicarbonate of soda, together with the other ingredients required for the intended mineral water, are mixed together in a mortar, and these are quickly formed into a paste with syrup or mucilage, divided into drages of a proper size, and dried. When used, one of the drages is dropped into a glass of water, and allowed slowly to dissolve, the disengaged carbonic acid being partly retained by the water.

DYES.

Nankeen dye. This is made by boiling arnotto and carbonate of potash in water, about one ounce of each to a pint of water; but the proportions are varied according to the shade of colour required. It is used for restoring the colour of faded nankeen clothing.

Pink dye.

℞	Washed safflower	ʒij.
	Carbonate of potash	gr. xviij.
	Spirit of wine	ʒvij.
	Water	℥ij.

Macerate for a day, then add enough distilled water or lemon-juice to produce a fine rose colour, and strain.

Used to die silk stockings, and as a cosmetic.

Hair dyes. Several compositions are used for dyeing the human hair on the head; the following are some of the best of them :—

1.

Expose good quick-lime to the air until it has slaked and fallen to a fine powder; it will now consist of *Hydrate*, and *Carbonate of lime*, fit for use in the following mixture ;—

℞ Lime slaked in the air . 2 parts
White lead in powder . 1 part

Mix, and preserve it in a bottle.

This powder, when used, is mixed with water or skimmed milk, so as to be of the consistence of thick cream; it is laid on the hair with a brush, and a comb passed through to ensure its coming in contact with every part; an oiled-silk cap is then put over it, to prevent the evaporation of the moisture. After allowing it to remain in this state for four or five hours, the cap is removed, and the powder washed out of the hair. The longer the dye is left on the hair, the darker will be the colour produced by it.

Caustic slaked lime, diluted with one-third its weight of starch, or calcined oyster-shells, are sometimes substituted for the lime slaked as above directed.

There is always an unnatural shade of redness in the colour produced by this dye.

2.

℞ Acetate of lead , . . ℥ij.
Prepared chalk . . . ℥iij.
Quick-lime, slaked . . ℥iv.

Water, sufficient to reduce it to the consistence of thick cream. To be used in the same way as No. 1.

3.

℞ Litharge . . . . ℥ij.
Quick-lime, slaked . . ℥j.
Powdered starch . . ℥j.
Solution of potash . . ʒij.

Water, sufficient to reduce it to the consistence of a thick cream. To be used in the same way as No. 1.

Nos. 2 and 3, are subject to the same objection as No. 1, in regard to the colour produced. They answer better for a jet black than for any shade of brown.

4.

℞ Nitrate of silver . . . ʒj.
Distilled water . . ℥j.

Sap-green, sufficient to colour it.

This is applied to the hair by means of a fine-toothed comb. It must not be allowed to touch the skin, or it will stain it as well as the hair.

5.

℞ Hydrosulphuret of ammonia ℥j.
Solution of potash . . ʒiij.
Distilled water . . . ℥j.

Mix, and label "Solution, No. 1."

℞ Nitrate of silver . . ʒj.
Distilled water . . . ℥ij.

Mix, and label "Solution, No. 2."

The "Solution, No. 1," is first applied to the hair with a tooth-brush, and the application continued for fifteen or twenty minutes. The "Solution, No. 2," is then brushed over, a comb being at the same time used to separate the hairs, and allow the liquid to come in contact with every part. If the stain produced is not sufficiently dark, the process must be repeated.

All the shades of colour resulting from the use of this dye are unexceptionable.

6.

℞ Nitrate of silver . . . ʒij.
Cream of tartar . . ʒij.
Solution of ammonia . . ʒiv.
Lard . . . . ℥ss.

Mix. This is to be applied with a comb and hard tooth-brush, taking care not to touch the skin.

Note. It is necessary, before applying any of these hair-dyes, that the hair should be well cleaned and freed from grease, by washing it in a weak solution of carbonate of soda, or with soap and water.

Eau de Cologne.

1.

℞ Oil of bergamot	℥iij.
Lemons	℥ij.
Lavender	ʒiijss.
Neroli	ʒijss.
Origanum	ʒij.
Rosemary	ʒj.
Essence of vanilla	ʒij.
Musk	gr. x.
Rectified spirit	Oxiij.
Rose water	Oij.
Orange flower water	Oj.

Macerate for 14 days, and filter.

2.

℞ Oil of bergamot	ʒiij.
Lemons	ʒij.
Lavender	gtt. xxv.
Neroli	gtt. xv.
Origanum	gtt. x.
Rectified spirit	Oij.

Mix.

3.

℞ Oil of bergamot,	
Lemons, āā	ʒj.
Lavender,	
Neroli, āā	gtt. xxx.
Rectified spirit	Oj.

Mix.

4.

℞ Oil of bergamot,	
Lemons, āā	ʒj.
Neroli	ʒss.
Cedrat	gtt. xx.
Honey water	℥j.
Rectified spirit	Oj.

Mix.

5.

℞ Oil of bergamot,	
Lemons,	
Citron,	
Orange peel, āā	ʒij.
Cedrat,	
Rosemary, āā	ʒj.
Lavender,	
Neroli, āā	ʒss.
Cinnamon	gtt. xv.
Rectified spirit	Oiij.

Mix, and macerate for a week; then distil with the heat of a water-bath, and add,

Honey water	Oss.

Mix.

Eau de luce.

℞ Oil of amber	ʒij.
White soap	gr. xv.
Balsam of Mecca	gr. xv.
Rectified spirit	℥vj.

Macerate for eight days, and then filter. Add fʒj of this tincture to f℥ij of solution of ammonia, sp. gr. 920.

See also *Tinct. ammoniæ composita.* Lond. Pharm.

Eau medicinale d'husson.

This is generally supposed to be a tincture of colchicum made with sherry wine, as follows:—

℞ Colchicum cormi	℥ij.
Sherry wine	℥viij.

Macerate for a week, and strain.

Dose. From ten to forty drops.

EAU DE RABEL. *Alcohol sulfurique. Acide sulfurique alcoolisé.*

℞	Alcohol (sp. gr. 850)	3 parts	by weight.
	Sulphuric acid (sp. 1·845)	1 part	

Add the acid to the alcohol, stirring them together with a glass rod.

The mixture will consist of sulphovinic acid, sulphuric acid, spirit, and water.

Elixir acide de Haller, is made with equal parts, by weight, of alcohol and sulphuric acid, mixed as above.

Elixir acide de Dippel, is made with 5 parts of alcohol and 1 of sulphuric acid, coloured with saffron and animal kermes.

These preparations are employed as astringents and antiseptics, in doses of a few drops, in some aqueous menstruum.

EGG FLIP.

℞	Good beer	Oj.
	Eggs	No. 3
	Sugar	℥ij.
	Nutmeg and ginger	q. s.

Beat the eggs with half the beer and the sugar, then heat them over the fire nearly to the boiling point, and add the remainder of the beer and the spice.

ELATERIN.

The active principle of elaterium. It may be obtained in several different ways.

(1.) Evaporate an alcoholic tincture of elaterium to a syrupy consistence, and then pour it into boiling distilled water, when the elaterin, not quite pure, will separate in the form of a white crystalline precipitate. This may be further purified, by dissolving it in spirit and again precipitating in the same way.

(2.) Evaporate an alcoholic tincture of elaterium to the consistence of hard extract, and treat this with pure ether, when the elaterin will remain undissolved. It may be dissolved in spirit, and crystallized.

(8.) Evaporate an alcoholic tincture of elaterium to the consistence of a thin syrup, and pour this into a mixture of equal parts of liquor potassæ, and water at a boiling temperature. The elaterin will separate in small silky crystals as the liquor cools.

ELECTROPUNCTURA. *Electropuncture. Electropuncturation.* This consists in a union of acupuncture and electricity. The operation of acupuncturation is performed in the usual way, either with one or with several needles, and an electrical current is then passed through them.

ACUPUNCTURA. *Acupuncture. Acupuncturation.* This operation consists in the introduction of needles into different parts of the body, with the view of removing or mitigating disease. It is an ancient mode of treatment which has been revived in modern times.

Needles are employed which are very fine, well polished, and sharp pointed, and usually from two to four inches long. They are sometimes of gold, silver, or platinum, but more frequently of steel. When of the last-named metal they are heated to redness, and allowed to cool slowly, so as to destroy their brittleness. The needle is introduced into the part affected by a particular rotatory movement, accompanied by slight pressure, and is allowed to remain in for a length of time varying from a few minutes to an hour or two.

ELIXIR GARI. *Elixir de garus. Garus' elixir.*

Soubeiran's Pharm. 1840.

1.

℞	Socotrine aloes	490 grs.
	Myrrh	245 „
	Saffron	490 „
	Canella alba	245 „
	Cloves	245 „
	Nutmegs	245 „
	Spirit (sp. gr. 923.)	20 lbs.
	Orange flower water	℥xvj.

Macerate for two days, and distil of

Alcoholic liquor	10 lbs.

This is the "*Alcoolat de Garus.*"

To form the "*Elixir de Garus,*" add to the above liquor.

Syrup of Capillaire	12½ lbs.

and colour it with a sufficient quantity of saffron macerated in ℥viij of orange flower water.

2.

Thierry's Formula.

℞	Aloes	122 grs.
	Myrrh	122 „
	Saffron	122 „
	Canella alba	488 „
	Cloves	488 „
	Nutmegs	244 „
	Spirit (sp. gr. 864)	13 lbs.

Distil off 12 lbs. of "*Alcoolat.*" To the residue of the distillation add

Rose water	10 lbs.

Distil off 6 lbs. and add as much of this aromatic water to the *Alcoolat* a will make the sp. gr. 890. Then take of

The above liquor	℔xj.
Simple syrup	℔xv.
Tincture of vanilla,	
Tincture of orange peel, āā	f℥iiss.
Fresh milk	℔j.
Tincture of saffron, q. s.	

Macerate for two days, and then filter it.

ELIXIR PROPRIETATIS PARACELSI. *Elixir de proprieté de Paracelse. Paracelsus' elixir of propriety.*

Soubeiran's Pharm. 1840.

℞	Tincture of myrrh	℥iv.
	Tincture of saffron	℥iij.
	Tincture of aloes	℥iij. Mix.

See also *Tinctura aloes composita.*

EMBROCATIO (from εμβρεχω, I moisten). An external fluid application for any part of the body

Embrocatio aconitinæ. *Embrocation of aconitine.*

Dr. Turnbull.

℞	Aconitina	gr.viij.
	Rectified spirit	f℥ij. Mix.

Embrocatio ammoniæ. *Dr. Hawkins' embrocation. Ward's essence for the headache.*

℞	Camphor	ʒij.
	Rectified spirit	℥xiv.
	Solution of ammonia	℥ij.
	Oil of lavender	℥ss. Mix.

Embrocatio delphiniæ. *Embrocation of delphinia.*

Dr. Turnbull.

℞	Delphinia	℈j.
	Rectified spirit	f℥ij. Mix.

Embrocatio veratriæ. *Embrocation of veratria.*

Dr. Turnbull.

℞	Veratria	℈j.
	Rectified spirit	f℥ij. Mix.

A larger portion of veratria is sometimes used.

Emery.

A massive variety of sapphire, consisting principally of alumina. It is found in Spain, the Greek Islands, &c. The powder, obtained in different degrees of fineness by elutriation, is used for cleaning and polishing hard surfaces.

Emplastrum (from εμπλασσω, to spread upon). *A plaster.*

A solid and tenacious compound, usually adhesive at the ordinary heat of the human body, and intended for external application.

Emplastrum æruginis. *Verdigris plaster.*

Codex.

℞	Yellow wax	125 parts,
	Burgundy pitch	60 ,,
	Common turpentine	30 ,,
	Powdered verdigris	30 ,,

Melt the three first ingredients, then stir in the verdigris, and strain.

Emplastrum adhesivum. *Prestat's adhesive plaster.*

℞	Lead plaster	400 parts,
	Resin	50 ,,
	Venice turpentine	38 ,,
	Mastich	12 ,,
	Gum ammoniacum	12 ,,

Melt the lead plaster, resin, and turpentine together, then add the gums in fine powder, and when thoroughly incorporated, spread the plaster on linen or calico.

EMPLASTRUM AMMONIÆ. *Kirkland's volatile plaster.*

℞ White soap	℥ij.
Lead plaster	℥iv.
Sal ammoniac	℥ss.

Melt the soap and plaster together, and add the sal ammoniac in fine powder.

EMPLASTRUM AMMONIACI. *Plaster of ammoniacum.*

Lond. Ph. 1836.

℞ Ammoniacum . .	℥v.
Distilled vinegar . .	f℥viij.

Dissolve the ammoniacum in the vinegar; then evaporate the liquor with a slow fire, constantly stirring, to a proper consistence.

Edin. Ph. 1841.

℞ Ammoniac . . .	℥v.
Distilled vinegar . .	f℥ix.

Dissolve the ammoniac in the vinegar, and then evaporate to a proper consistence over the vapour-bath, frequently stirring the liquid.

Dubl. Ph. 1826.

℞ Pure gum ammoniac . . .	℥v.
Vinegar of squill	℥viij.

Dissolve the ammoniac in the vinegar, then evaporate the liquor by heat, continually stirring it until it is of a proper consistence.

Use. Stimulant and resolvent.

EMPLASTRUM AMMONIACI CUM HYDRARGYRO. *Plaster of ammoniacum with mercury.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Ammoniacum . .	℔j.
Mercury . . .	℥iij.
Olive oil . . .	fʒj.
Sulphur . . .	gr.viij.

To the heated oil add the sulphur gradually, stirring constantly with a spatula, until they incorporate; then rub the mercury with them, until globules are no longer visible; lastly, add the ammoniacum gradually when melted, and mix them all.

Dubl. Ph. 1826.

℞ Pure gum ammoniac . .	℔j.
Purified mercury . .	℥iij.
Common turpentine . .	ʒiij.

Rub the mercury with the turpentine until the globules disappear; then by degrees add the ammoniacum melted, and with a medium heat rub them together till they all unite.

Use. This is a more active plaster than the preceding; it is applied in syphilitic pains in the joints and limbs, in nodes and indurated glands.

Emplastrum antimoniale. *Antimonial plaster.*

Niemann.

℞ Resin plaster	℥j.
Resin	ʒiv.
Venice turpentine	ʒiij.

Melt together with a gentle heat, and add, when nearly cold,

Tartarized antimony, in powder	ʒj.

This is applied to the nape of the neck, in scarlatina, in children. It has also been successfully employed, mixed with opium, in rheumatic affections of the joints.

Emplastrum aromaticum. *Aromatic plaster.*

Dubl. Ph. 1826.

℞ Frankincense	℥iij.
Yellow wax	℥ss.
Cinnamon bark, powdered	ʒvj.
Essential oil of Jamaica pepper, Essential oil of lemons, āā	ʒij.

Melt the frankincense and wax together and strain; when they are beginning to thicken by cooling, mix in the powder of cinnamon, rubbed up with the oils, and make a plaster.

Use. A stimulant application over the region of the stomach, in case of great irritability of that region; also in dyspepsia.

Emplastrum assafœtidæ. *Assafœtida plaster.*

Edin. Ph. 1841.

℞ Litharge plaster, Assafœtida, āā	℥ij.
Galbanum, Bees'-wax, āā	℥j.

Liquefy the gum resins together and strain them; then add the plaster and wax also in the fluid state, and mix them all thoroughly.

Emplastrum belladonnæ. *Belladonna plaster.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Plaster of resin	℥iij.
Extract of belladonna	℥iss.

To the plaster, melted with the heat of a water-bath, add the extract, and mix.

Dubl. Ph. 1826.

℞ Inspissated juice of belladonna	℥j.
Soap plaster	℥ij.

Make a plaster.

Use. Anodyne and antispasmodic.

Emplastrum calefaciens. *Warming plaster.*

Dubl. Ph. 1826.

℞ Cantharides plaster	1 part,
Burgundy pitch	7 parts.

Melt the ingredients with a medium heat, and mix them together to form a plaster.

EMPLASTRUM CANTHARIDIS. *Plaster of cantharides.*

Lond. Ph. 1836.

℞ Cantharides, rubbed to a very fine powder . . . ℔j.
Plaster of wax . . . ℔iss.
Lard . . . . ℔ss.

Sprinkle the cantharides in the plaster and lard melted together, and removed from the fire, a little before they concrete, and mix them all.

Edin. Ph. 1841.

℞ Cantharides, in very fine powder,
Resin,
Bees'-wax,
Suet, āā . . . . ℥ij.

Liquefy the fats, remove them from the heat, sprinkle in the cantharides, and stir briskly, as the mixture concretes on cooling.

Dub. Ph. 1826.

℞ Cantharides, reduced to a very fine powder,
Yellow wax, āā . . . ℔j.
Yellow resin . . . . ℥iv.
Mutton suet, Hog's lard, āā . . lbss.

Having melted the wax, fat, and resin together, when they are just becoming stiff by cooling, sprinkle in the cantharides and mix, so as to form a plaster.

EMPLASTRUM CANTHARIDIS COMPOSITUM. *Compound plaster of cantharides.*

Edin. Ph. 1841.

℞ Venice turpentine . . . ℥ivss.
Burgundy pitch, Cantharides, āā . ℥iij.
Bees'-wax . . . ℥j.
Verdigris . . . . ℥ss.
White mustard seed, Black pepper, āā . ʒij.

Liquefy the wax and Burgundy pitch, add the turpentine, and while the mixture is hot, sprinkle into it the remaining articles previously in fine powder, and mixed together. Stir the whole briskly, as it concretes on cooling.

EMPLASTRUM CERÆ. *Plaster of wax.*

Lond. Ph. 1836.

℞ Wax,
Suet, āā . . . . lbiij.
Resin . . . . lbj.

Melt them together and strain.

Edin. Ph. 1841.

℞ Bees'-wax . . . ℥iij.
Suet,
Resin, āā . . . . ℥ij.

Melt them together with a moderate heat, and stir the mixture briskly till it concretes on cooling.

Use. Chiefly as an ingredient in the Emp. Cantharidis.

EMPLASTRUM CERATI SAPONIS. *Soap cerate plaster.*

Put lbiv. of soap cerate into a water-bath, and continue the application of the heat until the moisture is entirely evaporated, then add ℥j. of mastich and ℥j. gum ammoniacum, in fine powder, and stir them together until they are completely incorporated. Afterwards spread the plaster on linen or calico. The mastich and ammoniacum may be omitted.

EMPLASTRUM CUMINI. *Cumin plaster.*

Lond. Ph. 1788.

℞	Cumin seed, caraway seed, bay-berries, āā	℥iij.
	Burgundy pitch	lbiij.
	Yellow wax	℥iij.

Melt the pitch and wax together, and stir in the other ingredients.

EMPLASTRUM DIAPALMUM. *Emplatre diapalme. Palm plaster.*

Soubeiran's Ph. 1840.

℞	Simple plaster	32
	White wax	2
	Sulphate of zinc	1

Liquefy the plaster and the wax, and add the sulphate of zinc, dissolved in a small quantity of water. Reuss and Plenck introduced oil of palm into the composition of the plaster.

EMPLASTRUM DIAPOMPHOLYGOS.

Ph. Batava, 1805.

℞	Yellow wax	℥xij.
	Olive oil	℥vii.

To these, melted by a gentle fire, add

Lead, burnt	℥vj.
Carbonate of lead, bruised	℥iv.
Impure oxide of zinc	℥iij.
Olibanum	℥iss.

Boil, with constant stirring, to the consistence of a plaster.

EMPLASTRUM FERRI. *Plaster of iron.*

Edin. Ph. 1841.

℞	Litharge plaster	℥iij.
	Resin	ʒvj.
	Olive oil	fʒiiiss.
	Bees'-wax	ʒiij.
	Red oxide of iron	℥j.

Triturate the oxide of iron with the oil, and add the mixture to the other articles previously liquefied by a gentle heat. Mix the whole thoroughly.

EMPLASTRUM GALBANI. *Galbanum plaster.*

Lond. Ph. 1836.

℞	Galbanum	℥viij.
	Plaster of lead	lbiij.
	Common turpentine	ʒx.
	Resin of the spruce fir, powdered	℥iij.

To the galbanum and turpentine melted together, first add the resin of the spruce fir, then the plaster of lead, melted with a slow fire, and mix them all.

Dubl. Ph. 1826.

℞	Litharge plaster	lbij.
	Gum galbanum	lbss.
	Scrapings of yellow wax	℥iv.

Melt the galbanum, and add the litharge plaster and wax; then melt them together with a medium heat, and strain.

EMPLASTRUM GUMMOSUM. *Gum plaster.*

Edin. Ph. 1841.

℞ Litharge plaster	℥iv.
Ammoniac,	
Galbanum,	
Bees-wax, āā	℥ss.

Melt the gum-resins together, and strain them; melt also together the plaster and wax; add the former to the latter mixture, and mix the whole thoroughly.

Use. Digestive and suppurative; applied to indolent tumours.

EMPLASTRUM GLUTINANS SANTI ANDREÆ A CRUCE. *Delacroix's agglutinative plaster.*

Codex.

℞ Burgundy pitch	250 parts.
Elemi resin	60 "
Common turpentine	30 "
Oil of bays	30 "

Melt together, and strain.

EMPLASTRUM HYDRARGYRI. *Plaster of mercury.*

Lond. Ph. 1836.

℞ Mercury	℥iij.
Plaster of lead	lbj.
Olive oil	f℥j.
Sulphur	gr.viij.

To the heated oil add the sulphur gradually, stirring constantly with a spatula until they incorporate; afterwards rub the mercury with them, until globules are no longer visible; then gradually add the plaster of lead melted with a slow fire, and mix them all.

Edin. Ph. 1841.

℞ Mercury	℥iij.
Olive oil	f℥ix.
Resin	℥j.
Litharge plaster	℥vj.

Liquefy together the oil and resin, let them cool, add the mercury, and triturate till its globules disappear; then add to the mixture the plaster previously liquefied, and mix the whole thoroughly.

Use. Discutient; alterative.

EMPLASTRUM ICTHYOCOLLÆ. *Isinglass plaster.*

Court plaster.

℞ Isinglass	℥ij.
Water	℥viij.

Dissolve with heat.

℞ Benzoin resin	℥ss.
Rectified spirit	℥iv.

Dissolve and strain. Add the two solutions together, and evaporate to the proper consistence.

Apply several coats of this mixture, with a brush, to black silk stretched on a frame, and when dry, brush it over with the following solution:—

℞	Chio turpentine	℥j.
	Tincture of benzoin	℥ij. Mix.

Flesh-coloured silk is sometimes used instead of black silk.

Liston's isinglass plaster.

This is made by spreading several coats of strong solution of isinglass in weak spirit, over the surface of oiled silk, or still better, over animal membrane previously prepared for the purpose from the peritoneal membrane of the cœcum of the ox.

EMPLASTRUM LADANI. *Ladanum plaster.*

Lond. Ph. 1788.

℞	Ladanum	℥iij.
	Frankincense	℥j.
	Powdered cinnamon,	
	Expressed oil of mace, āā	℥ss.
	Oil of mint	ʒss.

Melt the ladanum and frankincense together, add the oil of mace, then put them into a warm mortar, and mix in the cinnamon and oil of mint.

EMPLASTRUM E MELILOTO. *Melilot plaster.*

Lond. Ph. 1744.

℞	Melilot leaves	lbvj.
	Beef suet	lbiij.
	White resin	lbviij.
	Yellow wax	lbiv.

Heat the herb with the suet until it becomes crisp, then strain and press, and add the resin and wax.

EMPLASTRUM E MINIO. *Minium plaster.*

Lond. Ph. 1646.

℞	Olive oil	lbiv.
	Powdered minium	lbiiss.

To be made in the same way as *Emplastrum plumbi,* excepting that more water is to be used.

EMPLASTRUM MINII. *Emplatre de Nuremberg ou de minium. Red lead plaster.*

Soubeiran's Ph. 1840.

℞	Simple plaster	6,775 troy grs.
	Yellow wax	2,960 ,,
	Olive oil	980 ,,
	Red lead	1,476 ,,
	Camphor	124 ,,

Melt the plaster and the wax ; rub the red lead and the oil together on a porphyry slab, and add these to the former, and when nearly cold, stir in the camphor previously dissolved in a little spirit.

EMPLASTRUM E MUCILAGINIBUS. *Mucilage plaster.*

Lond. Ph. 1746.

℞	Yellow wax	℥xl.
	Oil of mucilages	℥viij.
	Ammoniacum, strained	℥vj.
	Common turpentine	℥ij.

Melt the ammoniacum and turpentine together; melt the wax and oil in a separate vessel, and add these gradually to the former.

EMPLASTRUM OPII. *Plaster of opium.*

Lond. Ph. 1836.

℞	Hard opium, powdered	℥ss.
	Resin of the spruce fir, powdered	℥iii.
	Plaster of lead	lbj.
	Water	f℥viij.

To the melted plaster add the resin of the spruce fir, the opium, and the water, and with a slow fire boil down, until all unite into a proper consistence.

Edin. Ph. 1841.

℞	Powder of opium	℥ss.
	Burgundy pitch	℥iij.
	Litharge plaster	℥xij.

Liquefy the plaster and pitch, add the opium by degrees, and mix them thoroughly.

Dubl. Ph. 1826.

℞	Opium, reduced to powder	℥ss.
	Burgundy pitch	℥iij.
	Litharge plaster	lbj.

Having melted the plaster, add the opium and pitch, taking care to mix them completely.

Use. As an anodyne application in rheumatism and other local pains.

EMPLASTRUM OXYCROCEUM. *Oxycroceum plaster.*

Edin. Ph. 1744.

℞	Yellow wax	lbj.
	Black pitch	lbss.
	Galbanum	lbss.
	Venice turpentine, Myrrh, Olibanum, āā	℥iij.
	Saffron	℥ij.

Melt, and mix together.

EMPLASTRUM PARACELSI. *Paracelsus' plaster. Emplastrum stypticum.*

℞	Lead plaster	℥xxviij.
	Galbanum plaster	℥ij.
	Powdered canella alba, Frankincense, āā	℥iss.

Melt, and mix together.

EMPLASTRUM PICIS. *Pitch plaster.*

Lond. Ph. 1836.

℞ Burgundy pitch	lbij.
Resin of the spruce fir	lbj.
Resin, Wax, āā.	℥iv.
Expressed oil of nutmegs	℥j.
Olive oil,	
Water, āā	f℥ij.

To the pitch, resin, and wax melted together, add first the resin of the spruce fir, then the oil of nutmegs, the olive oil, and the water. Lastly, mix them all, and boil down to a proper consistence.

Edin. Ph. 1841.

℞ Burgundy pitch	lbiss.
Resin,	
Bees'-wax, āā	℥ij.
Oil of mace	℥ss.
Olive oil	f℥j.
Water	f℥j.

Liquefy the pitch, resin, and wax with a gentle heat; add the other articles; mix them well together, and boil till the mixture acquires the proper consistence.

Use. Stimulant, and occasionally rubefacient.

EMPLASTRUM PLUMBI. *Lead plaster.*

Lond. Ph. 1836.

℞ Oxide of lead, rubbed to very fine powder	lbvi.
Olive oil	conj. j.
Water	Oij.

Boil them together with a slow fire, constantly stirring, until the oil and oxide of lead unite into the consistence of a plaster; but it will be proper to add a little boiling water, if nearly the whole of that which was used in the beginning should be evaporated before the end of boiling.

Edin. Ph. 1841. *Emplastrum lithargyri.*

℞ Litharge, in fine powder	℥v.
Olive oil	f℥xij.
Water	f℥iij.

Mix them; boil and stir constantly till the oil and litharge unite, replacing the water, if it evaporate too far.

Dubl. Ph. 1826. *Emplastrum lythargyri.*

℞ Litharge, reduced to a very fine powder	lbv.
Olive oil	conj. j.
Boiling water	Oij.

Mix them with a superior heat, constantly stirring until the oil and litharge unite so as to form a plaster, obviating the consumption of the water by occasionally pouring on a fresh supply.

Use. This forms the basis of several other plasters; also applied to excoriations, for keeping together the edges of recent cuts.

EMPLASTRUM RESINÆ. *Resin plaster.*

Lond. Ph. 1836.

℞ Resin	lbss.
Plaster of lead	lbiij.

To the plaster of lead melted with a slow fire, add the resin, powdered, and mix.

Edin. Ph. 1841.

℞ Litharge plaster	℥v.
Resin	℥j.

Melt them together with a moderate heat, and stir the mixture well till it concretes on cooling.

Dubl. Ph. 1826. *Emplastrum lithargyri cum resina.*

℞	Litharge plaster . . .	lbiijss.
	Yellow resin	lbss.

Having melted the litharge plaster with a medium heat, sprinkle in the resin reduced to fine powder, and make a plaster.

Use. For keeping on other dressing, and retaining the edges of recent wounds together.

EMPLASTRUM SAPONIS. *Soap plaster.*

Lond. Ph. 1836.

℞	Soap, sliced . .	lbss.
	Plaster of lead . .	lbiij.

Mix the soap with the melted plaster; then boil down to a proper consistence.

Edin. Ph. 1841.

℞	Litharge plaster . .	℥iv.
	Gum plaster . .	℥ij.
	Castile soap in shavings .	℥j.

Melt the plasters together with a moderate heat, and stir the mixture briskly till it concretes on cooling.

Dubl. Ph. 1826.

℞	Litharge plaster . . .	lbiij.
	Shavings of hard soap . .	lbss.

Having melted the plaster with a gentle heat, mix in the soap; then boil so as to form a plaster.

Use. Discutient.

EMPLASTRUM SAPONIS COMPOSITUM. *Compound soap plaster.*

Dubl. Ph. 1826.

℞	Soap plaster	℥ij.
	Litharge plaster, with resin . .	℥iij.

Make a plaster, which should be melted and spread on linen.

EMPLASTRUM THURIS. *Frankincense plaster.*

Dubl. Ph. 1826.

℞	Litharge plaster . . .	lbij.
	Frankincense . . .	lbss.
	Red oxide of iron . . .	℥iij.

Having melted the plaster and frankincense together, sprinkle in the oxide, stirring them together to form a plaster.

Use. In muscular relaxations and weakness of the joints.

ENAMELS, are varieties of glass, generally opaque and coloured, which are applied by fusing them at the flame of a blow-pipe, or by the heat of a small furnace, over the surfaces of metals, such as copper or gold.

The basis of all enamels is a fusible glass called the flux, which is variously coloured by the addition of metallic oxides.

Fluxes for enamels.

1.

℞	Powdered flints	℥iv.
	Flint glass	℥xij.
	Red lead	℥xvj.
	Calcined borax	℥iij.

Melt in a Hessian crucible; keep it melted for several hours in a steady heat, then pour it into water, and grind it in a hard biscuit-ware mortar.

2.

℞	Flint glass	℥x.
	White arsenic,	
	Nitre, āā	℥j.

Treat as No. 1.

3.

℞	Flint glass	℥iij.
	Red lead	℥j.

Treat as No. 1.

4.

℞	Flint glass	℥xvj.
	Red lead	℥xix.
	Borax, not calcined	℥xj.

Treat as No. 1.

5.

℞	Flint glass	℥vj.
	Red lead	℥viij.
	Flux, No. 2	℥iv.

Treat as No. 1.

Black enamels.

1.

R	Pure clay	℥iij.
	Iron scales	℥j.

Mix, and fuse.

2.

℞	Iron scales	℥xij.
	Oxide of cobalt	℥j.
	Flux, No. 1	℥xiij.

Mix.

3.

℞	Peroxide of manganese	℥iij.
	Zaffre	℥j.
	Flux, No. 1	℥iv.

Mix.

Blue enamels.

1.

Either of the fluxes mixed with oxide of cobalt.

2.

℞	Sand, Red lead, Nitre, āā	℥x.
	Flint glass	℥xx.
	Oxide of cobalt	℥j.

Mix.

Brown enamels.

1.

℞	Manganese	℥x.
	Red lead	℥xxxij.
	Powdered flints	℥xvj.

Mix.

2.

℞	Red lead,	
	Iron scales, āā	℥j.
	Antimony,	
	Litharge,	
	Sand, āā	℥ij.
	Flux, No. 1	q. s.

Mix.

Green enamels.

1.

℞	Flux	lbij.
	Black oxide of copper	℥j.
	Peroxide of iron	ʒss.

Mix.

2.

℞	Flux	℥v.
	Black oxide of copper	℈ij.
	Oxide of cromium	gr. ij.

Mix.

Olive enamel.

1.

℞	Blue enamel	℥ij.
	Black enamel,	
	Yellow enamel, āā	℥j.

Mix.

Orange enamel.

℞	Red lead	℥xij.
	Red sulphate of iron	℥j.
	Oxide of antimony	℥j.
	Powdered flints	℥iij.
	Flux	℥j.

Mix.

Purple enamel.

Flux coloured with the purple of cassius, or peroxide of manganese.

Red enamel, dark.

℞	Sulphate of iron, calcined	℥vij.
	Flux, No. 1	℥xviij.
	Colcothar	℥j.

Mix.

Red enamel, light.

℞	Red sulphate of iron	℥ij.
	Flux, No. 1	℥vj.
	White lead	℥iij.

Mix.

White enamels.

1.

℞	Tin	2 parts
	Lead	1 part

Calcine them together, separating the oxide that collects on the surface.

Of this oxide	℥j.
Fine crystal	℥ij.

Manganese, a very small quantity.

Mix and fuse these, and pour the fused mass into water; repeat the process three or four times.

2.

℞	Washed diaphoretic antimony	℥j.
	Glass, free from lead	℥iij.

Mix, and treat as the last.

Yellow enamel.

℞	Red lead	℥viij.
	Oxide of antimony	℥j.
	Oxide of tin	℥j.

Mix and calcine together, then take of the

Calcined powder	℥ij.
Flux, No. 4	℥iij.

Mix.

ENCAUSTIC.

Encaustic painting was practised by the ancients; it consists in using wax, to give a gloss to the colours, and to preserve them from injury. The art was restored in 1753, by Count Caylus. The wood or cloth to be painted on, is first prepared by rubbing it over with wax, and then holding it over or before a fire, so that the wax may melt, diffuse itself, penetrate the texture, and fill up all the interstices, so as to form a perfectly smooth surface.

The following instructions were communicated to the Society of Arts, in 1787, by Miss Greenland, who acquired the knowledge in Florence.

> "Melt ℥j of white wax in a glazed earthen vessel, over a slow fire, add, in small quantities at a time, ℥j of powdered mastick, stirring them continually, until the mastick is completely dissolved, and the whole incorporated. Then pour them into cold water, and when hardened reduce them to powder in a Wedgwood's mortar, previously separating any adhering water by means of blotting-paper.
>
> "In painting, this powder is to be mixed with the colours with a strong solution of gum-arabic. Light colours require but a small quantity of the

powder, but more of it must be put in proportion to the body and darkness of the colours; and to black there should be almost as much of the powder as of colour.

"Having mixed the colours, and no more of them than can be used before they get dry, proceed to paint with plain water, in the same way as in painting in water-colours. The painting should be highly finished, otherwise, when varnished, the tints will not appear united.

"When the painting is quite dry, it is to be brushed over with a hard brush dipped in melted white wax, and afterwards held to the fire, so that the surface of the wax may be rendered quite smooth."

The following varnish is sometimes used for encaustic painting:—

℞ White wax . . .	1 part.
Oil of turpentine . . .	2 parts.

Mix with heat.

Oil of wax is sometimes substituted for oil of turpentine.

ENEMA ALÖES. *Enema of aloes.*

Lond. Ph. 1836.

℞ Aloes	℈ii.
Carbonate of potash .	gr. xv.
Decoction of barley . .	Oss.

Mix and rub them together.

Use.—in cases of ascarides in the rectum and in constipation.

ENEMA CATHARTICUM. *Cathartic enema.*

Ed. Ph. 1841.

℞ Olive oil	℥j.
Sulphate of magnesia .	℥ss.
Sugar	℥j.
Senna	℥ss.
Boiling water . .	f℥xvj.

Infuse the senna for an hour in the water; then dissolve the salt and sugar; add the oil, and mix them by agitation.

Dubl. Ph. 1826.

℞ Manna ℥j. Dissolve it in ℥x. by measure of compound decoction of chamomile, and add

Olive oil	℥j.
Sulphate of magnesia .	℥ss.

Mix.

ENEMA COLOCYNTHIDIS. *Enema of colocynth.*

Lond. Ph. 1836.

℞ Compound extract of colocynth .	℈ij.
Soft soap	℥j.
Water	Oj.

Mix, and rub them together.

ENEMA FŒTIDUM. *Fœtid enema.*

Edin. Ph. 1841, and Dubl. Ph. 1826.

Add to the cathartic enema two drachms of tincture of assafœtida.

Use.—The fœtid enema is antispasmodic and carminative.

ENEMA OPII. *Enema of opium.*

Lond. Ph. 1836.

℞	Decoction of starch	f℥iv.
	Tincture of opium	♏xxx.

Mix.

Edin. Ph. 1841.

℞	Starch	ʒss.
	Tincture of opium	fʒss. to fʒi.
	Water	f℥ij.

Boil the starch in the water, and when it is cool enough for use, add the tincture of opium.

Dubl. Ph. 1826.

℞	Tincture of opium	ʒj.
	Warm water	℥vj.

Use.—This enema is anodyne, and used in irritable states of the bladder and uterus; also in dysentery.

ENEMA TABACI. *Enema of tobacco.*

Lond. Ph. 1836.

℞	Tobacco	ʒj.
	Water, boiling	Oj.

Macerate for an hour, and strain.

Edin. Ph. 1841.

℞	Tobacco	15 gr. to ʒss.
	Boiling water	f℥viij.

Infuse for half an hour, and then strain.

Use.—Has been sometimes given in cases of hernia. It is a dangerous application.

ENEMA TEREBINTHINÆ. *Turpentine enema.*

Lond. Ph. 1836.

℞	Oil of turpentine	f .
	Yolk of egg	q. s.

Rub together, and add

Decoction of barley	f℥xix.

Mix.

Edin. Ph. 1841.

℞	Oil of turpentine	f℥j.
	Yolk of egg	q. s.
	Water	f℥xix.

Rub the oil and yolk carefully together, and then add the water gradually.

Dub. Ph. 1826.

℞	Common turpentine	℥ss.
	Yolk of one egg.	

Rub them together, and add gradually ten ounces of water, of a temperature not exceeding 100° Fahr.

Use.—In cases of ascarides, in peritoneal inflammation, and as an active assistant to cathartics in general.

ERGOTINA. *Ergotine. Aqueous extract of ergot of rye. Hæmostatic extract.*

M. Bonjean has recommended this preparation, as possessing all the hæmostatic without the poisonous properties of the ergot. He directs it to be made as follows:—

Exhaust powdered ergot of rye with cold water by displacement, and heat the liquor in a water-bath; if coagulation takes place, separate the coagulum with a filter; then evaporate the clear liquor to the consistence syrup, and when cold, add to it a large excess of rectified spirit, so as to precipitate all gummy matter; separate the precipitate, and evaporate the liquor to the consistence of an extract.

500 parts of ergot will yield 70 or 80 parts of this extract.

ESSENTIA ABIETIS. *Essence of spruce.* The young twigs of the Scotch, or some other kind of fir, are boiled in water, and the decoction evaporated to the consistence of treacle. It is tonic and stimulant. Used for making spruce beer.

ESSENTIA AMBRÆGRISEÆ. *Essence of ambergris.*

℞	Ambergris	ʒiiss.
	Rectified spirit	Oj.

Macerate for fourteen days and strain.

ESSENTIA AMBRÆGRISEÆ ET MOSCHI. *Essentia regia. Essence royale. Essence of ambergris and musk.*

1.

℞	Ambergris	ʒiijss.
	Musk	ʒij.
	Oil of cinnamon	♏xlviij.
	Oil of rhodium	♏xxxij.
	Essence of roses	f℥iv.
	Rectified spirit	f℥xxiv.
	Orange flower water.	f℥iv.
	Sand	℥ij.

Rub the ambergris and musk with the sand, then add the spirit and other ingredients; macerate for fourteen days, and then strain.

2.

℞	Ambergris	ʒij.
	Musk	ʒi.
	Oil of cinnamon	gtt. xxxvj.
	Oil of rhodium	gtt. xxiv.
	Subcarbonate of potash	ʒiij.
	Essence of roses	f℥ix.
	Rectified spirit	f℥xviij.

Macerate for eight days, and strain.

ESSENTIA AMYGDALÆ AMARÆ. *Essence of bitter almonds.*

℞	Oil of bitter almonds	f℥ij.
	Spirit of wine	f℥vj. Mix.

ESSENTIA CAMPHORÆ. *Essence of camphor. Concentrated camphor julep.*

℞	Camphor	ʒj.
	Rectified spirit	℥ijss.
	Water	℥ss.

Dissolve the camphor in the spirit and add the water. This is intended for the extemporaneous preparation of camphor julep, by adding a few drops of the essence to a glass of water, and stirring them briskly. A little tincture of myrrh is sometimes added, in making the essence, as this is found to promote the solution of the camphor in the water.

ESSENTIA CAPSICI. *Essence of cayenne pepper.*

℞	Cayenne pepper	℥iv.
	Rectified spirit	Oj.

Digest with a gentle heat for seven days, then press and strain the essence. It may be better made by displacement.

ESSENTIA CLUPEÆ. *Essence of anchovies.*

Pound ℔j of anchovies in a Wedgwood's mortar, put them into a pipkin with ℥iv of the best vinegar, and boil them for a few minutes, then pulp them through a hair sieve. To the portion that passes through the sieve, add ℥ij of salt, the same quantity of flour, and sufficient water to give it the proper consistence; boil them together for a few minutes, and colour the mixture with arnotto. A little cayenne pepper is sometimes added.

ESSENTIA MENTHÆ PIPERITÆ. *Essence of peppermint.*

1.

℞ Oil of peppermint	℥j.
Rectified spirit	℥iij.

Mix.

2.

℞ Oil of peppermint	℥j.
Rectified spirit	℥v.

Mix.

This essence is sometimes coloured green with the fresh leaves of spinach, or of the peppermint plant.

ESSENTIA MENTHÆ PULEGII. *Essence of pennyroyal.*

1.

℞ Oil of Pennyroyal	℥j.
Rectified spirit	℥iij.

Mix.

2.

℞ Oil of pennyroyal	℥j.
Rectified spirit	℥v.

Mix.

Sometimes coloured with the fresh leaves of spinach or of the pennyroyal plant.

ESSENTIA ODONTALGICA. *Essence for tooth-ache.*

1.

℞ Pellitory of Spain root	℔ss.
Extract of belladonna	ʒij.
Rectified spirit	Oj.

Macerate for fourteen days, and strain; then add,

Hyponitrous ether	℥j.
Oil of wine	℥ss.
Oil of cloves	ʒij.

Mix.

2.

℞ Acetate of morphia	gr. xxiv.
Strongest acetic acid	ʒiv.
Oil of cloves	ʒvj.
Tincture of pellitory of Spain	℥j ʒvj.

Mix.

ESSENTIA ODORATA. *Essence for the handkerchief.*

℞ English oil of lavender	gtt. xlviij.
Oil of cloves	gtt. xxxij.
Oil of orange peel	gtt. xvj.
Oil of bergamot	gtt. viij.
Sweet spirit of nitre	gtt. viij.
Oil of yellow sandal wood, Oil of Neroli, Otto of roses. āā	gtt. ij.
Oil of cinnamon	gtt. j.
Rectified spirit	℥j.

Dissolve and add

Honey water	℥viij.
Essence of ambergris and musk	℥j.

Mix.

ESSENTIA ROSÆ. *Essence of roses.*

1.

℞	Otto of rose	ʒv.
	Rectified spirit	Ov.

Mix.

2.

℞	Rectified spirit	Oij.
	Subcarbonate of potash	℥iv.

Shake them together in a bottle and allow them to stand for several days, shaking the bottle from time to time, then pour off the strong spirit, which will be found floating, over a dense solution of carbonate of potash. To this spirit add

Otto of rose	ʒij.
Oil of bergamot	ʒj.
Oil of neroli	gtt. x.

Mix.

ESSENTIA SAPONIS. *Essence de savon. Essence of soap.*

Soubieran's Ph. 1844.

℞	White soap	24 parts.
	Distilled water	32 „
	Alcohol sp. gr. 923	64 „
	Carbonate of potash	1 „
	Essence of lemons, or any other	q. s.

The soap is dissolved without the aid of heat; the alcaline carbonate and essence are added, and the whole is filtered. This essence is employed for the toilette.

ESSENTIA SEMENÆ APII. *Essence of celery seeds.*

℞	Celery seeds	℥iv.
	Proof spirit	Oj.

Macerate for fourteen days, and strain.

This is used for culinary purposes. Several other essences are made in the same way, or by dissolving volatile oils in spirit.

ESSENTIA VOLATILIS. *Volatile essence, for smelling-bottles.*

1.

℞	English oil of lavender,	
	Essence of musk, āā	ʒiv.
	Oil of bergamot	ʒij.
	Oil of cloves	ʒj.
	Otto of roses	gtt.x.
	Oil of cinnamon	gtt.v.
	Strongest Liq. ammon.	Oj.

Mix.

2.

℞	Essence of lemon,	
	Oil of bergamot, āā	ʒvj.
	Oil of lavender	ʒj.
	Oil of neroli,	
	Oil of cassia, āā	ʒss.
	Otto of roses	ʒiss.
	Oil of cloves,	
	Oil of orange peel, āā	gtt.xv.
	Oil of sandal wood	gtt.x.
	Strongest Liq. ammon.	Oj.

Mix.

3.

℞	Oil of bergamot	℥iij.
	Essence of lemons	℥ij.
	Oil of lavender	ʒvj.
	Essence of jasmine	ʒiv.
	Oil of neroli	ʒij.
	Otto of roses	ʒiss.
	Oil of origanum	ʒj.
	Essence of ambergris	ʒj.
	Oil of sassafras	ʒiij.
	Musk	gr. xx.

Mix, and macerate for a week, then add ℥iss of the clear oil to Oj of the strongest solution of ammonia.

4.

℞	Oil of bergamot,	
	Essence of ambergris and musk, āā	ʒij.
	Oil of lavender	gtt. xxxvj.
	Oil of cinnamon	gtt. x.
	Otto of roses	gtt. xxiv.
	Essence of jasmine	gtt. xx.
	Essence of violets	gtt. x.
	S Liq. ammon.	Oj.

Mix

ESSENTIA ZINGIBERIS. *Essence of ginger.*

No. 1.

℞ Unbleached Jamaica ginger . ℥iv.
Rectified spirit . . . Oj.

Macerate for a fortnight, and strain.

No. 2.

℞ Ginger, in fine powder . lbss.
Animal charcoal . . ℥iv.
Rectified spirit . . . lbj.

Mix the ginger and animal charcoal together, introduce them into a displacement apparatus, and allow the spirit to percolate through in the usual manner; displacing the essence by as much more spirit as is necessary.

No. 3.

℞ Ginger, in fine powder . lbss.
Rectified spirit . . lbj.

Operate as in the previous case.

No. 4.

℞ Jamaica ginger . . . lbj.
Rectified spirit . . . lbiij.

Macerate for 14 days, press, and strain the tincture. Then introduce it into a retort, and carefully distil off the spirit, with the heat of a water-bath, until one pint remains in the retort. The spirit distilled off may be used in the next operation. The essence remaining in the retort will be very strong, but will have lost some of the fine flavour of the ginger.

EXTRACTUM ACONITI. *Extract of aconite.*

Lond. Ph. 1836.

℞ Aconite leaves, fresh . . . lb. j.

Bruise them, sprinkled with a little water, in a stone mortar; then press out the juice, and evaporate it, unstrained, to a proper consistence.

Edin. Ph. 1841.

Take of leaves of monkshood, fresh, any convenient quantity; beat them into a pulp; express the juice; subject the residuum to percolation with rectified spirit, so long as the spirit passes materially coloured; unite the expressed juice and the spirituous infusion; filter; distil off the spirit; and evaporate the residuum in the vapour-bath, taking care to remove the vessel from the heat as soon as the due degree of consistence shall be attained.

SUCCUS SPISSATUS ACONITI. *Inspissated juice of monkshood.*

Dubl. Ph. 1826.

℞ Fresh leaves of monkshood . . lbj.

Having moistened the leaves with water, pound them in a mortar. Then express the juice, and without defæcation reduce it to a proper consistence in a water-bath, constantly stirring with a spatula towards the close of the operation.

Med. use. Narcotic, and in some cases diuretic. Used in chronic rheumatism, intermittent fever, glandular swellings, and certain convulsive affections.

Dose. Half a grain at first, which may, in some cases, be increased to 3 or 4 grains.

EXTRACTUM ACONITI ALCOHOLICUM. *Alcoholic extract of aconite.*

U. S. Ph. 1840.

℞ Aconite, in coarse powder	lbj.
Diluted alcohol	Oiv.

Moisten the aconite with Oss of the diluted alcohol, and having allowed it to stand for twenty-four hours, transfer it to an apparatus for displacement, and add gradually the remainder of the diluted alcohol. When the last portions of this shall have penetrated the aconite, pour in sufficient water from time to time to keep the powder covered. Cease to filter when the liquid which passes begins to produce a precipitate as it falls in that which has been already filtered. Distil off the alcohol from the liquor, and evaporate the residue to a proper consistence.

EXTRACTUM ALOES PURIFICATUM. *Purified extract of aloes.*

Lond. Ph. 1836.

℞ Aloes, powdered	℥xv.
Water, boiling	Cong. j.

Macerate for three days with a gentle heat; afterwards strain, and set by that the dregs may subside. Pour off the clear liquor, and evaporate it to a proper consistence.

Dubl. Ph. 1826.

Extractum aloës hepaticæ.

Boil the aloes with eight times its weight of water until reduced to half; then press out the liquor, let the fæces subside, and filter the supernatant portion; evaporate this at a heat between 200° and 212° Fahr., until it begins to thicken, then, with a heat between 100° and 200°, obtained by the steam of boiling water, inspissate it to the proper consistence for making it into pills.

EXTRACTUM ANTHEMIDIS. *Extract of chamomile.*

Edin. Ph. 1841.

℞ Chamomile . . . . lb.j.

Boil it with a gallon of water down to 4 pints; filter the liquor hot; evaporate in the vapour-bath to the due consistence.

Dubl. Ph. 1826.

Extractum florum chamæmeli.

To be made according to the instructions given for *Extractum aloes hepaticæ*, substituting chamomile flowers for aloes.

EXTRACTUM ARTEMISIÆ ABSYNTHII. *Extract of wormwood.*

Dubl. Ph. 1826.

To be made according to the instructions given for *Extractum aloes hepaticæ*, substituting wormwood for aloes.

EXTRACTUM BELLADONNÆ. *Extract of belladonna.*

Lond. Ph. 1836.

℞ Deadly nightshade leaves, fresh . . lbj.

Bruise them, sprinkled with a little water, in a stone mortar; then press out the juice, and evaporate it, unstrained, to a proper consistence.

Edin. Ph. 1841.

Take of belladonna, fresh, any convenient quantity, bruise it in a marble mortar into a uniform pulp; express the juice; moisten the residuum with water, and express again. Unite the expressed fluids, filter them, and evaporate the filtered liquid in the vapour-bath to the consistence of firm extract, stirring constantly towards the close.

Dubl. Ph. 1826. *Succus spissatus belladonnæ.*

Prepared in the same manner as the *Succus spissatus aconiti.*

Med. use. Externally, as an application to the eyebrows in ophthalmic surgery. Internally it is narcotic, diuretic, and diaphoretic. *Dose.* Quarter of a grain, gradually increased to 4 or 5 grains.

EXTRACTUM BELLADONNÆ ALCOHOLICUM. *Alcoholic extract of belladonna.*

U. S. Ph. 1840.

℞	Belladonna, in coarse powder . .	lbj.
	Diluted alcohol . . .	Oiv.

Moisten the belladonna with Oss of the diluted alcohol, and having allowed it to stand for twenty-four hours, transfer it to an apparatus for displacement, and add gradually the remainder of the diluted alcohol. When the last portions of this shall have penetrated the belladonna, pour in sufficient water from time to time to keep the powder covered. Cease to filter when the liquid which passes begins to produce a precipitate in that which has already been filtered. Distil off the alcohol from the liquor, and evaporate the residue to a proper consistence.

EXTRACTUM CACUMINUM SPARTII SCOPARII. *Extract of broom-tops.*

Dubl. Ph. 1826.

To be made according to the instructions for *Extractum aloes hepaticæ*, substituting broom-tops for aloes.

EXTRACTUM CANTHARIDIS. *Extrait de cantharides. Extract of cantharides.*

Soubeiran's Ph. 1840.

℞	Powder of cantharides . . .	q. v.
	Alcohol, sp. gr. 923 . . .	q. s.

Exhaust the cantharides by two or three macerations in the alcohol; distil and evaporate the liquors to the consistence of an extract. The alcohol employed for this preparation ought to be set aside in order to be employed subsequently for the same purpose.

EXTRACTUM CANNABIS INDICÆ. *Extract of Indian hemp.*

Bengal Dispensatory.

Boil the dried tops of Indian hemp in rectified spirit, distil off the spirit, and evaporate the extract by a gentle heat.

EXTRACTUM CINCHONÆ SICCUM. *Essential salt of bark.*

Codex.

Reduce cinchona bark to coarse powder; moisten it with half its weight of cold water, and when it has stood for twelve or fifteen hours, pack it closely in a displacement apparatus, and allow cold water to percolate through it, as long as it passes much charged with extract. Evaporate the liquor over a water-bath to the consistence of thick syrup, then spread it on earthenware plates, and dry it in a stove. Finally, chip it off the plates with a knife, and preserve it in small stoppered bottles.

Essential salt of bark, prepared as above, has been occasionally used in this country.

EXTRACTUM CINCHONÆ CORDIFOLIÆ. *Extract of heart-leaved cinchona.* (*Yellow bark.*)

Lond. Ph. 1836.

℞	Heart-leaved cinchona, bruised	℥xv.
	Distilled water	Cong. iv.

Boil down in a gallon of the water to six pints, and strain the liquor while hot. In like manner, boil down the bark in an equal measure of water four times, and strain. Lastly, all the liquors being mixed together, evaporate to a proper consistence.

EXTRACTUM CINCHONÆ LANCIFOLIÆ. *Extract of lance-leaved cinchona.*

EXTRACTUM CINCHONÆ OBLONGIFOLIÆ. *Extract of oblong-leaved cinchona.*

Lond. Ph. 1836.

Both to be prepared after the same manner as the *Extractum cinchonæ cordifoliæ.*

EXTRACTUM CINCHONÆ.

Edin. Ph. 1841.

℞	Any of the varieties of cinchona, but especially the yellow or red cinchona, in fine powder	℥iv.
	Proof spirit	f℥xxiv.

Percolate the cinchona with the spirit, distil off the greater part of the spirit, and evaporate what remains in an open vessel over the vapour-bath to a due consistence.

Dubl. Ph. 1826.

℞	Of lance-leaved cinchona bark, in coarse powder	lbj.
	Water	6 pints.

Boil, for a quarter of an hour, in a vessel almost covered; then having filtered the liquor while yet hot, and laid it aside, boil the bark again in an equal quantity of water, and filter again in the same manner; proceed in the same way a third time, and then, mixing all the liquors, reduce them by evaporation to a proper consistence. This extract should be kept in two states—*soft*, for the formation of pills, and *hard*, that it may be reducible into powder.

Med. use. Tonic, stomachic, and febrifuge. *Dose.* Grs. x. to ʒss.

EXTRACTUM COLCHICI ACETICUM. *Acetic extract of colchicum.*

Lond. Ph. 1836.

℞	Cormi of colchicum, fresh	lbj.
	Acetic acid	f℥iij.

Bruise the cormi, gradually sprinkling acetic acid, then express the juice, and evaporate it in an earthen vessel not glazed with lead.

Edin. Ph. 1841.

℞	Bulb of colchicum	lbj.
	Pyroligneous acid	f℥iij.

Beat the colchicum to a pulp, gradually adding the acid; express the liquid and evaporate it in a porcelain vessel, (not glazed with lead,) over the vapour-bath, to the due consistence.

Med. use. In gout and rheumatism. *Dose.* Gr. j. to gr. iv. twice or thrice a day.

EXTRACTUM COLCHICI CORMI. *Extract of the cormus of colchicum.*

Lond. Ph. 1836.

℞	Cormi of colchicum	lbj.

Bruise the cormi, sprinkled with a little water, in a stone mortar, then press out the juice, and evaporate it, unstrained, to a proper consistence.

Med. use. In acute rheumatism. *Dose.* Gr. j. every four hours.

EXTRACTUM COLOCYNTHIDIS. *Extract of colocynth.*

Lond. Ph. 1836.

℞	Colocynth, cut in pieces	lbj.
	Distilled water	cong. ij.

Mix and boil with a slow fire for six hours, frequently adding distilled water, that it may always fill the same measure. Strain the liquor while hot. Lastly, evaporate it to a proper consistence.

Edin. Ph. 1841.

℞	Colocynth	lbj.
	Water	cong. ij.

Boil gently for six hours, replacing the evaporated water occasionally. Strain the liquor while hot; and evaporate it in the vapour-bath to the due consistence.

Dubl. Ph. 1826. *Extractum colocynthidis simplex.*

℞	Pulp of colocynth	lbj.
	Water	cong. j.

Boil down to 4 pints, and filter the liquor whilst hot; then evaporate to a proper consistence.

Med. use. Purgative. *Dose.* Grs. v. to grs. xx.

EXTRACTUM COLOCYNTHIDIS COMPOSITUM. *Compound extract of colocynth.*

Lond. Ph. 1836.

℞	Colocynth, cut in pieces	℥vj.
	Purified extract of aloes	℥xij.
	Scammony, powdered	℥iv.
	Cardamom [husked] powdered	℥j.
	Soap	℥iij.
	Proof spirit	cong. j.

Macerate the colocynth in the spirit, with a gentle heat, for four days; strain the spirit, and add to it the aloes, scammony, and soap; afterwards evaporate to a proper consistence, the cardamom being mixed towards the end.

Dubl. Ph. 1826.

Precisely similar to the London formula, except that instead of *Purified extract of aloes, Hepatic aloes* is ordered.

EXTRACTUM CONII. *Extract of hemlock.*

Lond. Ph. 1836.

℞	Hemlock leaves, fresh . . .	lbj.

Bruise them, sprinkled with a little water, in a stone mortar; then press out the juice, and evaporate it, unstrained, to a proper consistence.

Edin. Ph. 1841.

Take of conium any convenient quantity; beat it into a uniform pulp in a marble mortar, express the juice and filter it. Let this juice be evaporated to the consistence of a very firm extract, either in a vacuum with the aid of heat, or spontaneously in shallow vessels exposed to a strong current of air freed of dust by gauze-skreens.

This extract is of good quality only when a very strong odour of conia is disengaged by degrees on its being carefully triturated with aqua potassæ.

Dubl. Ph. 1826.

Succus spissatus conii.

To be prepared in the same manner as the *Inspissated juice of aconite.*

Med. use. Sedative, alterative, and resolvent. *Dose.* From 1 grain to 15.

EXTRACTUM CONII ALCOHOLICUM. *Alcoholic Extract of hemlock.*

U. S. Ph. 1840.

℞	Hemlock, in coarse powder . .	lbj.
	Diluted alcohol . . .	Oiv.

Moisten the hemlock with Oss of the diluted alcohol, and, having allowed it to stand for twenty-four hours, transfer it to an apparatus for displacement, and add gradually the remainder of the diluted alcohol. When the last portions of this shall have penetrated the hemlock, pour in sufficient water from time to time to keep the powder covered. Cease to filter when the liquid which passes begins to produce a precipitate in that which has been already filtered. Distil off the alcohol from the liquor, and evaporate the residue to a proper consistence.

EXTRACTUM DIGITALIS. *Extract of foxglove.*

Lond. Ph. 1836.

℞	Foxglove leaves, fresh . .	lbj.

Bruise them, sprinkled with a little water, in a stone mortar; then press out the juice, and evaporate it, unstrained, to a proper consistence.

Edin. Ph. 1841.

This extract is best prepared from the fresh leaves of digitalis, by any of the processes indicated for extract of conium.

Med. use. The exhibition of foxglove in this form requires great caution, as the extract is liable to vary from a variety of causes.

EXTRACTUM ELATERII. *Extract of elaterium.*

Lond. Ph. 1836.

Slice ripe wild cucumbers, and strain the juice, very gently expressed, through a very fine hair sieve; then set it by for some hours, until the thicker part has subsided. The thinner, supernatant part being rejected, dry the thicker part with a gentle heat.

Edin. Ph. 1841.

Take of the fruit of the momordica elaterium, before it is quite ripe, any convenient quantity; cut the fruit, and express the juice gently through a fine sieve; allow the liquid to rest till it becomes pretty clear; pour off the supernatant liquor, which may be thrown away; and dry the feculence with a gentle heat.

Dubl. Ph. 1836.

Slice the ripe fruit of the wild cucumber into a vessel placed underneath, and having very gently expressed the juice, pass it through a very fine hair sieve into a glass vessel; then set it apart for some hours, until the thicker part subsides; reject the supernatant liquid, and having received the fecula upon a linen cloth, and covered it with another, dry it with a medium heat.

Med. use. A hydragogue cathartic. *Dose.* From half a grain to two grains.

EXTRACTUM GENTIANÆ. *Extract of gentian.*

Lond. Ph. 1836.

℞ Gentian, sliced . . lbijss.
Distilled water, boiling . cong. ij.

Macerate for twenty-four hours; then boil down to a gallon, and strain the liquor while hot; lastly, evaporate to a proper consistence.

Edin. Ph. 1841.

Take of gentian any convenient quantity, bruise it to a moderately fine powder; mix it thoroughly with half its weight of distilled water; in twelve hours put it into a proper percolator, and exhaust it by percolation with temperate distilled water; concentrate the liquid, filter before it becomes too thick, and evaporate in the vapour-bath to a due consistence.

Dubl. Ph. 1826.

Prepared as the *Extractum aloes hepaticæ.*

Med. use. A stomachic bitter. *Dose.* Ten grains to half a drachm, twice or thrice a day.

EXTRACTUM GLYCYRRHIZÆ. *Extract of liquorice.*

Lond. Ph. 1836.

℞ Liquorice, sliced . . . lbijss.
Distilled water, boiling . . cong. ij.

Macerate for twenty-four hours, then boil down to a gallon, and strain the liquor whilst hot; lastly, evaporate to a proper consistence.

Edin. Ph. 1841.

Cut liquorice root into small chips; dry it thoroughly with a gentle heat, reduce it to a moderately-fine powder, and proceed as for extract of gentian.

Dubl. Ph. 1826.

Prepared as the *simple* extracts.

Med. use. Emollient in cough, and in bronchial affections.

Extractum hæmatoxyli. *Extract of logwood.*

Lond. Ph. 1836.

℞ Logwood, powdered . lbijss.
Distilled water, boiling . cong. ij.

Macerate for twenty-four hours; then boil down to a gallon, and strain the liquor while hot; lastly, evaporate to a proper consistence.

Edin. Ph. 1841.

℞ Logwood, in fine chips . lbj.
Boiling water . . cong. j.

Macerate for twenty-four hours; then boil down to 4 pints, strain, and concentrate in the vapour-bath to the due consistence.

Dubl. Ph. 1826.

Prepared as the *Extractum aloes hepaticæ.*

Med. use. An astringent in diarrhœa and dysentery. *Dose.* From ten to thirty grains.

Extractum hyoscyami. *Extract of henbane.*

Lond. Ph. 1836.

℞ Henbane leaves, fresh . . lbj.

Bruise them, sprinkled with a little water, in a stone mortar; then press out the juice, and evaporate it, unstrained, to a proper consistence.

Edin. Ph. 1841.

This extract is to be prepared from the fresh leaves of hyoscyamus, by any of the processes directed for extract of conium.

Dubl. Ph. 1846.

Succus spissatus hyoscyami.

To be prepared in the same manner as the *Succus spissatus aconiti.*

Med. use. Sedative and antispasmodic. *Dose.* Five grains to ten grains.

Extractum hellebori. *Extract of black hellebore.*

U. S. Ph. 1840.

℞ Black hellebore, in coarse powder . lbj.
Diluted alcohol . . . Oiv.

Moisten the black hellebore with Oss of the diluted alcohol, and having allowed it to stand for twenty-four hours, transfer it to an apparatus for displacement, and add gradually the remainder of the diluted alcohol. When the last portions shall have penetrated the hellebore pour in sufficient water from time to time to keep the powder covered. Cease to filter when the liquid which passes begins to produce a precipitate in that which has been already filtered. Distil off the alcohol from the liquor and evaporate the residue to a proper consistence.

EXTRACTUM JALAPÆ. *Extract of jalap.*

Lond. Ph. 1836.

℞	Jalap, powdered	lbiiss.
	Rectified spirit	cong. j.
	Distilled water	cong. ij.

Macerate the jalap root in the spirit for four days, and pour off the tincture. Boil down the residue in the water to half a gallon; afterwards strain the tincture and the decoction separately, and let the latter be evaporated, and the former distilled, until each thickens. Lastly, mix the extract with the resin, and evaporate to a proper consistence.

This extract should be kept *soft*, which may be fit to form pills, and *hard*, which may be rubbed to powder.

Extractum sive resina jalapæ. Edinb. Ph. 1841.

Take any convenient quantity of jalap, in moderately fine powder; mix it thoroughly with enough of rectified spirit to moisten it well; put it in twelve hours into a percolator, and exhaust the powder with rectified spirit; distil off the greater part of the spirit, and concentrate the residuum over the vapour-bath to a due consistence.

Extractum jalapæ. Dubl. Ph. 1826.

℞	Jalap root, powdered	lbj.
	Rectified spirit	Oiv.
	Water	cong. j.

Macerate the jalap root in the spirit for four days, and pour off the spirit. Boil the residuum in the water until it is reduced to two pints; then filter the tincture and the decoction separately, evaporate the latter, and distil the former, until each of them begins to grow thick. Lastly, mix the extract with the resin, and by means of the heat of boiling water reduce them to a proper consistence.

Med. use. A hydrogogue. *Dose.* Grs. x. to ℈j.

EXTRACTUM JUGLANDIS. *Extract of butter-nut.*

U. S. Ph. 1840.

℞ The inner bark of the root of the Juglans cinerea in coarse powder lbj.; Water, a sufficient quantity. Mix the bark with a pint of the water, and after allowing the mixture to stand for twenty-four hours, introduce it into an apparatus for displacement, and pour water upon it gradually until the liquid passes but slightly impregnated with the properties of the bark. Heat the filtered liquid to the boiling point, strain, and evaporate to a proper consistence.

EXTRACTUM KRAMERIÆ. *Extract of krameria.*

Edin. Ph. 1841.

This extract is to be prepared from krameria root in the same way with that of liquorice root.

EXTRACTUM LACTIS. *Extract of milk.*

Plenck's Ph. 1804.

℞ Best cows' milk, any quantity.

Let it be evaporated to dryness over a slow fire; constant stirring must be employed lest towards the end it may be burned.

EXTRACTUM LACTUCÆ. *Extract of lettuce.*

Lond. Ph. 1836.

℞ Lettuce leaves, fresh . . . lbj.

Bruise them, sprinkled with a little water, in a stone mortar; then press out the juice, and evaporate it, unstrained, to a proper consistence.

Med. use. Considered by some to be a valuable sedative. *Dose.* Grs. v. to grs. x.

EXTRACTUM LUPULI. *Extract of hops.*

Lond. Ph. 1836.

℞	Hops	lbss.
	Distilled water, boiling . .	cong. ij.

Macerate for twenty-four hours; then boil down to a gallon, and strain the liquor while hot; lastly, evaporate to a proper consistence.

Edin. Ph. 1841.

This extract is prepared from hops in the same way with the *Extract of logwood.*

Dubl. Ph. 1826.

Prepared as the *Extractum aloes hepaticæ.*

Med. use. Sedative. *Dose.* Grs. v. to grs. xx.

EXTRACTUM NUCIS VOMICÆ. *Extract of nux vomica.*

Edin. Ph. 1841.

Take of nux vomica any convenient quantity; expose it in a proper vessel to steam till it is completely softened; slice it, dry it thoroughly, and immediately grind it in a coffee-mill; exhaust the powder either by percolating it with rectified spirit, or by boiling it with repeated portions of rectified spirit, until the spirit comes off free of bitterness. Distil off the greater part of the spirit; and evaporate what remains in the vapour-bath to a proper consistence.

Dubl. Ph. 1826.

℞	Rasped nux vomica . . .	℥viij.
	Proof spirit	Oij.

Digest for three days in a close vessel; strain the fluid, and express strongly the residuum: to this add a pint and a half of proof spirit; digest for three days, and express the residuum. The mixed liquors being consumed by distillation to one-fourth, reduce to a proper consistence. The extract, while thickening, should be frequently stirred. It may be reduced to a proper thickness in a medium heat by the aid of steam. The process ought to be conducted so as to prevent as much as possible the contact of the air: the softer extract may be sprinkled with rectified spirit.

Med. use. This extract has been found useful in incontinence of urine. *Dose.* From half a grain to two grains.

EXTRACTUM OPII PURIFICATUM. *Purified extract of opium.*

Lond. Ph. 1836.

℞	Opium, sliced	℥xx.
	Distilled water	cong. j.

Add a little water to the opium, and macerate for twelve hours, that it may soften; then, the rest of the water being poured in gradually, rub them, until they are very well mixed, and set by that the dregs may subside; afterwards strain the liquor, and evaporate to a proper consistence.

Edin. Ph. 1841. *Extractum opii.*

℞	Opium	lbj.
	Water	Ov.

Cut the opium into small fragments; macerate it for twenty-four hours in a pint of water, break down the fragments with the hand, express the liquid with pretty strong pressure; break down the residuum again in another pint of the water, let it macerate for twenty-four hours, and express the liquid; repeat the maceration and expression in the same way till the water is all used. Filter the successive infusions as they are made, passing them through the same filter; unite and evaporate them in the vapour-bath to the due consistence.

Dubl. Ph. 1826. *Extractum opii aquosum.*

℞	Opium, sliced	℥ij.
	Boiling water	Oj.

Triturate the opium with the water for ten minutes, and after a short interval pour off the liquor; triturate the residual opium with an equal quantity of boiling water, and for the same length of time, pouring off the liquor as before; do this a third time; mix the liquors, and expose the mixture to the air for two days in an open vessel. Lastly, filter through linen, and reduce it to an extract with a slow evaporation.

Med. use. Narcotic, sedative, and antispasmodic. *Dose.* Half a grain to five grains.

EXTRACTUM OPII ABSQUE NARCOTINA. *Extract of opium deprived of narcotine.*

Codex.

Mix extract of opium with cold water to the consistence of a syrup; put this into a bottle, and add to it eight times its volume of ether; shake them together repeatedly during a day or two, then decant off the ethereal solution, and repeat this process with fresh ether as long as it dissolves anything. Finally, evaporate the *aqueous solution* that shall remain to a pilular consistence, and preserve this for use.

EXTRACTUM PAPAVERIS. *Extract of poppy.*

Lond. Ph. 1836.

℞	Poppy [capsules], bruised, the seeds being taken out	℥xv.
	Distilled water, boiling	cong. j.

Macerate for twenty-four hours; then boil down to four pints, and strain the liquor while hot; lastly, evaporate to a proper consistence.

Edin. Ph. 1841.

The same as the London formula, except that the evaporation is directed to be conducted over a vapour-bath.

Med. use. A mild narcotic in the *dose* of from grs. ij to ℈j, in pills.

EXTRACTUM PAREIRÆ. *Extract of pareira.*

Lond. Ph. 1836.

℞	Pareira, bruised . . .	lbiiss.
	Distilled water, boiling . .	cong. ij.

Macerate for twenty-four hours; then boil down to a gallon, and strain the liquor while hot; lastly, evaporate to a proper consistence.

Edin. Ph. 1841.

This extract is to be prepared from pareira root in the same way with the extract of liquorice root.

Med. use. Diuretic. *Dose.* Gr. x. to ʒss.

EXTRACTUM QUASSIÆ. *Extract of quassia.*

Edin. Ph. 1841.

This extract is to be prepared from quassia in the same way with the extract of liquorice root.

Med. use. Stomachic. *Dose.* Grs. v. to grs. xv.

EXTRACTUM PODOPHYLLI. *Extract of May apple.*

U. S. Ph. 1840.

℞ The root of the podophyllum peltatum in coarse powder tt.j. alcohol 4 pints, water a sufficient quantity. Macerate the root with the alcohol for four days; then filter by means of an apparatus for displacement, and when the liquid ceases to pass, pour gradually upon the root sufficient water to keep the surface covered. When the filtered liquor measures 4 pints, set it aside and proceed with the filtration until 6 pints of infusion are obtained. Distil off the alcohol from the tincture, and evaporate the infusion till the liquids respectively are brought to the consistence of thin honey; then mix them and evaporate so as to form an extract.

EXTRACTUM CORTICIS QUERCUS. *Extract of oak-bark.*

Dubl. Ph. 1826.

Prepared as the *Extractum aloes hepaticæ.*

Med. use. Astringent. *Dose.* Grs. x. to ʒj.

EXTRACTUM RHEI. *Extract of rhubarb.*

Lond. Ph. 1836.

℞	Rhubarb, powdered	℥xv.
	Proof spirit	Oj.
	Distilled water	Ovij.

Macerate for four days with a gentle heat, afterwards strain, and set by, that the dregs may subside. Pour off the liquor, and evaporate it, when strained, to a proper consistence.

Edin. Ph. 1841.

℞	Rhubarb	lbj.
	Water	Ov.

Cut the rhubarb into small fragments, macerate it for twenty-four hours in three pints of the water, filter the liquor through a cloth, and express it with the hands or otherwise moderately; macerate the residuum with the rest of the water for twelve hours at least, filter the liquor with the same cloth as before, and express the residuum strongly. The liquors, filtered again if necessary, are then to be evaporated together to a proper consistence in the vapour-bath. The extract, however, is obtained of finer quality by evaporation in a vacuum with a gentle heat.

Dub. Ph. 1826.

℞	Root of rhubarb, powdered	lbj.
	Proof spirit	Oj
	Water	Ovij.

Digest for four days; then filter and set it aside that the dregs may subside. Pour off the liquor, and evaporate it to a proper consistence.

Med. use. Purgative. *Dose.* Grs. x. to ʒss. in pills.

EXTRACTUM FOLIORUM RUTÆ. *Extract of rue.*

Dubl. Ph. 1826.

Prepared as the *extractum aloes hepaticæ.*

Med. use. Antispasmodic. *Dose.* Grs. x. to ℈i.

EXTRACTUM SARZÆ. *Extract of sarsaparilla.*

Lond. Ph. 1836.

℞	Sarsaparilla, sliced	lbiiss.
	Distilled water, boiling	cong. ij.

Macerate for twenty-four hours; then boil down to a gallon, and strain the liquor while hot; lastly, evaporate to a proper consistence.

Dubl. Ph. 1826.

℞	Sarsaparilla root, sliced	lbj.
	Boiling water	cong. j.

Macerate for twenty-four hours; then boil down to four pints, strain the liquor while yet warm; and lastly, reduce it by heat to a proper consistence.

Soubeiran's Ph. 1840. *Extrait de salsepareille.*

℞ Sarsaparilla divided	q. p.
Alcohol sp. gr. 923	q. s.

The root is moistened with half its weight of alcohol; it is then heaped up in the apparatus for lixiviation, and washed with three parts of alcohol; this is displaced in a great measure by water, and the alcoholic liquors are distilled. The residue of the distillation is evaporated to the consistence of an extract.

Extractum sarzæ fluidum. *Fluid extract of sarsaparillo.*

Edin. Ph. 1841.

℞ Sarza in chips	lbj.
Boiling water	Ovj.

Digest the root for two hours in four pints of the water; take it out, bruise it, replace it, and boil for two hours; filter and squeeze out the liquid: boil the residuum in the remaining two pints of water, and filter and squeeze out this liquor also; evaporate the united liquors to the consistence of thin syrup; add, when the product is cool, as much rectified spirit as will make in all sixteen fluid ounces. Filter.

This fluid extract may be aromatized with volatile oils or warm aromatics.

Dubl. Ph. 1826.

℞ Root of sarsaparilla, sliced	lbj.
Water	Oxij.

Let them boil together for an hour, and pour off the liquor; then add twelve pints of water, and repeat the boiling and pouring off. Press strongly the liquor from the remaining material, set aside the mixed liquors that the fæces may subside; then evaporate the mixture by continual boiling down to thirty ounces, and add two ounces of rectified spirit.

Extractum sive resina scammonii. *Extract,* or *resin of scammony.*

Edin. Ph. 1841.

Take any convenient quantity of scammony in fine powder; boil it in successive portions of proof spirit till the spirit ceases to dissolve any thing; filter; distil the liquid, till little but water passes over. Then pour away the watery solution from the resin at the bottom; agitate the resin with successive portions of boiling water till it is well washed; and lastly, dry it at a temperature not exceeding 240°.

Med. use. A drastic cathartic in the dose of from grs. viij. to grs. xii.

Extractum stramonii. *Extract of thorn-apple.*

Lond. Ph. 1836 .

℞ Thorn-apple seeds	℥xv.
Distilled water, boiling	cong. j.

Macerate for four hours, in a vessel lightly covered, near the fire; afterwards take out the seeds, and bruise them in a stone mortar; return them when bruised to the liquor. Then boil down to four pints, and strain the liquor while hot. Lastly, evaporate to a proper consistence.

Edin. Ph. 1841.

Take of seeds of stramonium any convenient quantity; grind them well in a coffee-mill.

Rub the powder into a thick mass with proof-spirit; put the pulp into a percolater, and transmit proof spirit till it passes colourless; distil off the spirit, and evaporate what remains in the vapour-bath to a proper consistence.

Dubl. Ph. 1826.

℞ Seeds of the thorn-apple	lbj.
Boiling water	conj. j.

Digest for four hours in a vessel lightly covered; then take out the seeds, bruise them in an earthen mortar, and when bruised return them into the liquor; boil down to four pints, and having filtered the decoction, reduce it to a proper consistence.

Med. use. Narcotic and anodyne; useful in maniacal paroxysms, sciatica, and chronic rheumatism. *Dose*, from a fourth of a grain to five grains.

EXTRACTUM STYRACIS. *Extract of storax.*

Edin. Ph. 1841.

Take any convenient quantity of storax, in fine powder; exhaust it by boiling it in successive quantities of rectified spirit; filter the spirituous solutions; distil off the greater part of the spirit; evaporate the remainder over the vapour-bath to the consistence of a thin extract.

EXTRACTUM TARAXACI. *Extract of dandelion.*

Lond. Ph. 1836.

℞ Dandelion root, fresh, bruised	lbiiss.
Distilled water, boiling	cong. ij.

Macerate for twenty-four hours; then boil down to a gallon, and strain the liquor while hot; lastly, evaporate to a proper consistency.

Edin. Ph. 1841.

℞ Fresh root of taraxacum	lbj.
Boiling water	cong. j.

Proceed as for the preparation of extract of poppy heads.

Dubl. Ph. 1826. *Extractum herbæ et radicis taraxaci.*

Proceed as for extract of gentian, employing the fresh root and herb.

Med. use. Tonic, diuretic, and aperient. It has been found a very valuable medicine in various disorders and derangements of the abdominal viscera; more especially in chronic affections of the stomach and liver. *Dose* from gr. x. to ʒss.

EXTRACTUM UVÆ URSI. *Extract of bear's whortleberry.*

Lond. Ph. 1836.

℞ Whortleberry, bruised	lbiiss.
Distilled water, boiling	cong. ij.

Macerate for twenty-four hours; then boil down to a gallon, and strain the liquor while hot; lastly, evaporate to a proper consistence.

Med. use. In affections of the urinary organs. *Dose* grs. vi. to ʒss.

FERRUM. *Iron.* *Symb.* Fe. *Eq.* 28.

Metallic iron is sometimes met with in nature; in a state of combination it is very abundant. The principal ores of iron are, *clay-iron-stone*, in which the iron exists as a carbonate of the protoxide; *Red hematite*, consisting of sesquioxide of iron; and *black or magnetic oxide of iron.*

Ferri Acetas. *Acetate of iron.*

Dubl. Ph. 1826.

℞	Carbonate of iron	1 part.
	Acetic acid	6 parts.

Digest during three days, and filter.

Use. Tonic. *Dose.* From ten to twenty-five grains *by measure.*

Tinctura ferri acetatis. *Tincture of acetate of iron.*

Dubl. Ph. 1826.

℞	Acetate of potash	2 parts.
	Sulphate of iron	1 part.
	Rectified spirit	26 parts.

Rub together in an earthenware mortar, the acetate of potash and sulphate of iron, until they unite into a mass; then let them be dried with a *medium* heat, and triturated with the spirit; let the mixture, with occasional stirring, be digested during seven days in a well-stopped bottle; finally, let the tincture be poured off from the sediment, and preserved in a vessel perfectly closed.

Use. Tonic. Advantageous in chlorosis. *Dose*, ʒss to ʒj *by measare.*

Ferri Ammonio-chloridum. *Ammonio-chloride of iron.*

Lond. Ph. 1836.

℞	Sesquioxide of iron	℥iij.
	Hydrochloric acid	Oss.
	Hydrochlorate of ammonia	lbiiss.
	Distilled water	Oiij.

Mix the sesquioxide of iron with the hydrochloric acid in a proper vessel, and digest them in a sand-bath for two hours; afterwards add the hydrochlorate of ammonia first dissolved in the distilled water; strain and evaporate all the liquor. Lastly, rub what remains to powder.

Note. Totally soluble in proof spirit and in water. Potash added to the solution throws down sesquioxide of iron; afterwards, when added in excess, it evolves ammonia.

Use. Tonic, emmenagogue, and aperient. *Dose*, gr. v. to gr. xx.

Tinctura ferri ammonio-chloridi. *Tincture of ammonio-chloride of iron.*

Lond. Ph. 1836.

℞	Ammonio-chloride of iron	℥iv.
	Proof spirit	Oj.

Dissolve the ammonio-chloride of iron in the spirit, and strain.

FERRI AMMONIO-CITRAS. *Ammonio-citrate of iron. Citrate of iron and ammonia.*

℞	Crystallized citric acid	℥iv.
	Distilled water	℥iv.
	Moist hydrated peroxide of iron, about	℥viij.

Dissolve the acid in the water in a Wedgwood's dish, heat the solution to boiling, then add the oxide of iron, which should be in slight excess. Continue the heat until no more oxide of iron is dissolved, then allow the solution to cool; add sufficient distilled water to make the quantity ℥xvj; filter the solution; add solution of ammonia until it becomes neutral to test paper; evaporate it at the heat of a water-bath to a syrupy consistence; spread it out on earthenware plates, and dry it with a gentle heat in a stove. When dry it will separate from the plates in scales.

FERRI AMMONIO-TARTRAS. *Ammonio-tartrate of iron.*

Aikin.

Put three parts of clean iron filings into a dish and add one part of tartaric acid dissolved in as much boiling water as will cover the iron. Keep the mixture in a warm place for two or three days, frequently stirring it, and adding more water, to supply the place of that lost by evaporation. When chemical action has ceased, add solution of ammonia in slight excess, triturate the ingredients together, add a little more water, filter the solution and evaporate it to dryness. Redissolve the dry mass in distilled water, add to it a little more ammonia, filter it, and evaporate the clear solution with the heat of a water-bath to a syrupy consistence, then spread it out on earthenware plates, and dry it at a gentle heat in a stove. When dry it will separate from the plates in scales.

FERRI ARSENIAS. *Arseniate of iron.*

Add a solution of arseniate of potash to solution of sulphate of iron as long as any precipitate is formed. Collect, wash, and dry the precipitate.

Use. It has been strongly recommended as a topical application, for destroying the vitality of cancerous formations. Mr. Carmichael has employed with success a mixture of ʒss of arseniate of iron and ʒij of phosphate of iron, mixed with water and applied very thin, with a camel's hair pencil.

FERRI BROMIDUM. *Bromide of iron.*

Put one part of clean iron filings into a stoppered bottle with three parts of water, then add one part of bromine. Close the bottle, and set it aside, shaking it occasionally, for several days. When the colour of the bromine has disappeared, filter the solution and evaporate it to dryness.

Dose. From one grain to three grains.

FERRI CARBONAS SACCHARATUM. *Saccharine carbonate of iron.*

Edin. Ph. 1841.

℞	Sulphate of iron	℥iv.
	Carbonate of soda	℥v.
	Pure sugar	℥ij.
	Water	Oiv.

Dissolve the sulphate and carbonate each in two pints of the water; add the solutions and mix them; collect the precipitate on a cloth filter, and immediately wash it with cold water, squeeze out as much of the water as possible, and without delay triturate the pulp which remains with the sugar previously in fine powder. Dry the mixture at a temperature not much above 120°.

Note.—Carbonate of the protoxide of iron in an undetermined state of combination with sugar and sesquioxide of iron. Colour grayish green; easily soluble in muriatic acid, with brisk effervescence.

FERRI CARBONAS. *Carbonate of iron.*

Dubl. Ph. 1826.

℞	Sulphate of iron . . .	25 parts.
	Carbonate of soda . . .	26 „
	Water	800 „

Dissolve the sulphate of iron in the water, then add the carbonate of soda, previously dissolved in a sufficient quantity of water, and completely mix.

Let the carbonate of iron which subsides be washed with warm water, and let it then be dried.

Med. use. Tonic. *Dose* from gr. iv. to gr. xxx. In tic douloureux ʒiv. have been given.

FERRI CHLORIDUM. *Chloride of iron. Protochloride of iron.*

Codex 1837.

℞	Iron filings	100
	Hydrochloric acid . . .	q. s.

Put the acid into a matrass; add the filings in divided portions, until the acid will dissolve no more; boil the solution on an excess of the filings; allow a deposition to take place for some moments; decant the clear portion, and evaporate it rapidly to dryness.

FERRI PERCHLORIDUM. *Perchloride of iron.*

Codex 1837.

℞	Red oxide of iron . . .	100
	Hydrochloric acid . . .	q. s.

Dissolve the oxide in the acid, evaporate the solution to dryness on a sand-bath; enclose the residue in well-stopped bottles.

TINCTURA FERRI SESQUICHLORIDI. *Tincture of sesquichloride of iron.*

Lond. Ph. 1836.

℞	Sesquioxide of iron .	℥vi.
	Hydrochloric acid . .	Oj.
	Rectified spirit . .	Oiij.

Pour the acid upon the sesquioxide of iron in a glass vessel, and digest for three days, frequently shaking. Lastly, add the spirit and strain.

Edin. Ph. 1841, *Ferri Muriatis tinctura.*

℞	Red oxide of iron . .	℥vi.
	Muriatic acid (commercial)	Oj.
	Rectified spirit . .	Oiij.

Add the oxide to the acid in a glass vessel; digest with a gentle heat, and occasional agitation, for a day, or till most of the oxide be dissolved; then add the spirit and filter.

Solution of sesquichloride of iron in rectified spirit. Tincture of iron.

Dubl. Ph. 1826. *Muriatis ferri liquor.*

℞ Rust of iron	1 part.
Muriatic acid,[1]	
Rectified spirit āā	6 parts.

Pour the acid on the rust passed into a glass vessel, and occasionally stir the mixture during three days, then set it apart that the dregs may subside, and pour off the clear liquor; by slow evaporation reduce this to one third part, and when cold, add to it the spirit.

Med. use. Tonic. *Dose,* ♏x to ♏xxx, twice a day.

FERRI CITRAS. *Citrate of iron.*

This is made according to the formula given for *Ammonio-citrate of iron,* only omitting the solution of ammonia.

FERRI ET QUINÆ CITRAS. *Citrate of iron and quinine.*

℞ Crystallized citric acid	9 parts.
Clean iron filings	3 parts.
Quinine	1 part.
Water	q. s.

Dissolve the acid in twice its weight of water, add the iron and apply a gentle heat until combination is effected; then add the quinine, continue the application of the heat for some minutes, filter the solution, and evaporate it to dryness; dissolve the residue in distilled water, and evaporate the solution with a gentle heat to a syrupy consistence; spread this out on earthenware plates, and dry it in a stove. When dry it will separate from the plates in scales.

FERRI ET QUINÆ CYANIDUM. *Hydro-cyano-ferras quinicus. Cyanide of iron and quinine. Ferrocyanide of quinine.*

Codex.

℞ Disulphate of quinine	100 parts.
Ferrocyanide of potassium	31 „
Distilled water	2500 „

Boil them together for several minutes, the new salt which will be formed will float on the surface of the liquid. When the liquid has cooled, separate the salt and wash it with a little water. It may be purified by dissolving it in boiling alcohol and allowing it to crystallize on cooling and spontaneous evaporation.

FERRI FERROCYANURETUM. *Ferrocyanide of iron. Soluble Prussian blue.*

℞ Sulphate of iron	℥iv.
Sulphuric acid	ʒiiiss.
Nitric acid	ʒvj. or q. s.
Ferrocyanide of potassium	℥ivss.
Water	Oij.

Dissolve the sulphate of iron in a part of the water, and having added the sulphuric acid boil the solution. Pour into it the nitric acid in small portions, boiling the liquid for a minute or two after each addition until it no longer produces a dark colour; then allow the liquor to cool. Dissolve the ferrocyanide of potassium in the remainder of the water, and add this solution gradually to the first liquid, agitating the mixture after each addition; then pour it on a filter. Wash the precipitate with boiling water until the washings pass tasteless. Lastly, dry it and rub it into powder.

FERRI IODIDUM. *Iodide of iron.*

Lond. Ph. 1836.

℞	Iodine . . .	℥vi.
	Iron filings . .	℥ij.
	Distilled water . .	Oivss.

Mix the iodine with four pints of the water, and to these add the iron. Heat them in a sand-bath, and when it has acquired a greenish colour, pour off the liquor. Wash what remains with the half pint of water, boiling. Let the mixed and strained liquors evaporate at a heat not exceeding 212° in an iron vessel, that the salt may be dried. Keep it in a well-stopped vessel, access of light being prevented.

Note. Emits violet vapours by heat, and sesquioxide of iron remains. When fresh prepared it is entirely soluble in water. From this solution, when kept in a badly-stopped vessel, sesquioxide of iron is very soon precipitated; but with iron wire immersed in it, it may be kept clear in a well-stopped vessel.

Edin. Ph. 1841.

℞ Any convenient quantity of iodine, iron-wire, and distilled water in the proportions for making solution of iodide of iron. Proceed as directed for that process; but before filtering the solution concentrate it to one-sixth of its volume, without removing the excess of iron-wire. Put the filtered liquor quickly in an evaporating basin, along with twelve times its weight of quicklime around the basin, in some convenient apparatus in which it may be shut up accurately in a small space not communicating with the general atmosphere. Heat the whole apparatus in a hot air-press, or otherwise, until the water be entirely evaporated; and preserve the dry iodide in small well-closed bottles.

Note. A protiodide of iron. Entirely soluble in water, or nearly so; forming a greenish solution.

Med. use. Stimulant to the glandular system, and also an excellent tonic in scrofula, chlorosis, amenorrhœa, &c.; in secondary syphilis found useful when combined with a slight mercurial alterative. *Dose.* One grain to two grains.

FERRI IODIDI SYRUPUS. *Syrup of iodide of iron.* E.

Edin. Ph. 1841.

℞	Iodine (dry) . . .	200 grains.
	Fine iron-wire, recently cleaned .	100 grains.
	White sugar in powder . .	℥ivss.
	Distilled water . . .	f℥vj.

Boil the iodine, iron, and water together in a glass matrass, at first gently to avoid the expulsion of iodine-vapours, afterwards briskly, until about two fluid ounces of liquid remain. Filter this quickly, while hot, into a matrass containing the sugar; dissolve the sugar with a gentle heat; and add distilled water, if necessary, to make up six fluid ounces.

Twelve minims contain one grain of iodide of iron.

Note.—A solution of iodide of iron in syrup. Colourless, or pale green; transparent; without sediment even when exposed to air.

Use. A very elegant and effectual tonic in the dose of about from ten to thirty minims.

FERRI LACTAS. *Lactate of iron.*

1.

Digest iron filings in a weak solution of lactic acid, at a gentle heat, for six or seven hours; filter the solution, and evaporate it, until, on cooling, crystals are deposited. These are to be collected, washed with spirit, and dried.

2.

Dissolve 100 parts of lactate of lime in 500 parts of boiling water, and filter the solution. Then dissolve 68 parts of crystallized protosulphate of iron in 500 parts of water. Mix the two solutions; slightly acidulate the mixture with lactic acid, and heat it over a water-bath, with agitation until the decomposition is complete. Filter the solution rapidly, to separate the sulphate of lime; add a small quantity of iron filings to the solution and evaporate it to one-half; then filter it, and set it by to crystallize. More crystals may be obtained on further evaporation. The crystals are to be washed with a little spirit.

FERRI MALAS IMPURUS. *Impure malate of iron.*

Codex 1837.

℞	Iron-filings porphyrised . . .	100 parts.
	Juice of sour apples . . .	800 „

Digest during three days in an iron vessel at a temperature of 77° F.; evaporate to one half, strain the liquor through a linen cloth, and continue the evaporation on a sand-bath until it is of the consistence of an extract Preserve this medicine in a well-closed vessel.

FERRI OXIDUM. *Oxide of iron.* Fe O.

This, the protoxide of iron, cannot be kept in contact with the air, as it rapidly passes to a higher state of oxidation.

FERRI OXIDUM NIGRUM. *Black oxide of iron.*

Edin. Ph. 1841.

℞	Sulphate of iron . .	℥vj.
	Sulphuric acid (commercial) .	fʒij and f℈ij
	Pure nitric acid . .	fʒivss.
	Stronger aqua ammoniæ .	f℥ivss.
	Boiling water . . .	Oiij.

Dissolve half the sulphate in half the boiling water and add the sulphuric acid; boil; add the nitric acid by degrees, boiling the liquid after each addition briskly for a few minutes. Dissolve the rest of the sulphate in the rest of the boiling water; mix thoroughly the two solutions; and immediately add the ammonia in a full stream, stirring the mixture at the same time briskly. Collect the black powder on a calico-filter; wash it with water till the water is scarcely precipitated by solution of nitrate of baryta; and dry it at a temperature not exceeding 180°.

Dubl. Ph. 1826.

Let the scales of oxide of iron, which are to be found at the smith's anvils, be washed with water; and when dried, let them be detached from impurities by application of a magnet. Then let them be reduced to powder, of which let the most subtle parts be detached, according to the mode directed for the preparation of chalk.

Use. The same as of the precipitated carbonate of iron.

FERRI SESQUIOXYDUM. *Sesquioxide of iron.*

Lond. Ph. 1836.

℞	Sulphate of iron	lbiv.
	Carbonate of soda	lbiv. and ℥ij.
	Water, boiling	cong. vj.

Dissolve the sulphate of iron and carbonate of soda separately in 3 gallons of water; then mix the liquors together, and set them by that the powder may subside. Lastly, the supernatant liquor being poured off, wash what has been precipitated with water, and dry it.

Note.—Dissolved totally by dilute hydrochloric acid with very slight effervescence, and it is precipitated by ammonia.

Edin. Ph. 1841. *Ferri oxidum rubrum.*

℞	Sulphate of iron	℥iv.
	Carbonate of soda	℥v.
	Boiling water	Oss.
	Cold water	Oiijss.

Dissolve the sulphate in the boiling water, add the cold water, and then the carbonate of soda previously dissolved in about thrice its weight of water. Collect the precipitate on a calico filter; wash it with water till the water is but little affected with solution of baryta; and dry it in the hot-air press or over the vapour-bath.

Note.—Entirely soluble in muriatic acid, aided by gentle heat.

FERRI OXIDUM RUBRUM. *Red oxide of iron.*

Dubl. Ph. 1826.

Let the sulphate of iron be exposed to heat, until the water of crystallization be expelled; then, with a strong fire, let it be roasted, so long as an acid vapour rises. Let the red oxide be washed until the washings, when examined by litmus, shall appear free from acid. Lastly, let it be dried on bibulous paper.

FERRUGO. *Hydrated sesquioxide of iron.*

Edin. Ph. 1841.

℞	Sulphate of iron	℥iv.
	Sulphuric acid (commercial)	f℥iijss.
	Nitric acid (D. 1380)	f℥ix.
	Stronger aqua ammoniæ	f℥iijss.
	Water	Oij.

Dissolve the sulphate in the water, add the sulphuric acid, and boil the solution; add then the nitric acid in small portions, boiling the liquid for a minute or two after each addition, until it acquires a yellowish brown colour, and yields a precipitate of the same colour with ammonia. Filter; allow the liquid to cool; and add in a full stream the aqua ammoniæ, stirring the mixture briskly. Collect the precipitate on a calico filter; wash it with water till the washings cease to precipitate with nitrate of baryta;

squeeze out the water as much as possible; and dry the precipitate at a temperature not exceeding 180°.

When this preparation is kept as an antidote for poisoning with arsenic, it is preferable to present it in the moist state, after being simply squeezed.

Note.—Entirely and very easily soluble in muriatic acid, without effervescence: if previously dried at 180°, a stronger heat drives off about 18 per cent. of water. The magnet does not attract it.

RUBIGO FERRI. *Rust of iron.*

Dubl. Ph. 1826.

℞ Iron wire, any required quantity, which, moistened with water, is to be exposed to the air until it becomes corroded into rust. Then let it be rubbed in an iron mortar, and by the affusion of water, let the most subtle powder be washed off and dried.

FERRI PERNITRAS. *Pernitrate of iron.*

LIQUOR FERRI PERSESQUINITRATIS. *Solution of persesquinitrate of iron.*

Kerr.

℞ Iron filings, or wire . . .	℥iss.
Nitric acid	f℥iij.
Hydrochloric acid . . .	ʒj.
Water	f℥xxvij.

Put the iron into a Wedgwood's dish, and pour over it the nitric acid diluted with ℥xv. of the water; let them stand until chemical action has ceased, then decant the liquid from the remaining iron, and add to it the hydrochloric acid, and as much water as will make 30 oz. of the solution.

Dose. From ten to twenty drops, in gruel or some other menstruum.

FERRI PHOSPHAS. *Phosphate of iron.*

U. St. Ph. 1840.

℞ Sulphate of iron . . .	℥v.
Phosphate of soda . . .	℥vj.
Water	cong. j.

Dissolve the sulphate of iron and phosphate of soda severally in 4 pints of water; then mix the solutions, and set the mixture by that the powder may subside. Lastly having poured off the supernatant liquor, wash the phosphate of iron in hot water, and dry it with a gentle heat.

Use. Employed as a topical application to cancerous ulcers.

FERRI OXYPHOSPHAS. *Oxyphosphate of iron. Sesquiphosphate of iron.*

Add a solution of phosphate of soda to solution of perchloride of iron as long as any precipitate is formed. Collect, wash, and dry this precipitate.

Use. It has been recommended by Mr. Carmichael in doses of ℈j. two or three times a day, in cancerous ulcerations and scirrhous tumours.

FERRI POTASSIO-TARTRAS. *Potassio-tartrate of iron.*

Lond. Ph. 1836.

℞ Sesquioxide of iron	℥iij.
Hydrochloric acid	Oss.
Solution of potash	Oivss or q. s.
Bitartrate of potash	℥xjss.
Solution of sesquicarbonate of ammonia,	Oj. or q. s.
Distilled water	cong. iij.

Mix the sesquioxide of iron with the acid, and digest for two hours in a sand-bath. Add to these 2 gallons of the water, and set aside for an hour; then pour off the supernatant liquor. The solution of potash being added, wash what is precipitated frequently with water, and while moist boil it with the bitartrate of potash, previously mixed with a gallon of the water. If the liquor should be acid when tried by litmus, pour into it solution of sesquicarbonate of ammonia until it is saturated. Lastly, strain the liquor, and, with a gentle heat, let it evaporate, so that the salt may remain dry.

Note.—Totally soluble in water. The solution does not change either litmus or turmeric; nor is it rendered blue by perrocyanide of potassium; nor is any thing precipitated from it by any acid or alkali. The magnet does not act upon it.

Edin. Ph. 1841. *Ferrum tartarizatum.*

℞ Sulphate of iron	℥v.
Bitartrate of potash	℥v. and ʒj.
Carbonate of ammonia, in fine powder	q. s.

Prepare the rust of iron from the sulphate as directed under Ferrugo, and without drying it. Mix the pulpy mass with 4 pints of water; add the bitartrate, boil till the rust of iron is dissolved; let the solution cool; pour off the clear liquid, and add to this the carbonate of ammonia so long as it occasions effervescence. Concentrate the liquid over the vapour-bath to the consistence of a thick extract, or till the residuum becomes, on cooling, a firm solid, which must be preserved in well-closed vessels.

Note.—Tartrate of potash and sesquioxide of iron. *Tartrate of iron.* Entirely soluble in cold water; taste, feebly chalybeate. The solution is not altered by aqua potassæ, and precipitated by solution of ferrocyanide of potassium.

Dubl. Ph. 1826. *Tartarum ferri.*

℞ Iron, drawn into thin wire	1 part.
Bitartrate of potash, triturated into a very subtle powder	4 parts.
Distilled water	8 parts or q. s.

Let them be mixed, and exposed to the air during fifteen days in a wide vessel. Let the mixture, which is to be occasionally stirred, be kept constantly moist by the daily addition of water, taking care that the iron shall not be entirely covered by the water. Lastly, boil the product in a sufficient quantity of water, and let the filtered liquor evaporate to dryness over a water-bath. Let the tartar of iron be kept in a well-stopped vessel.

Soubeiran, 1840.

Potassio-tartrate of iron.

℞	Cream of tartar	1 part.
	Distilled water	6 parts.
	Moist hydrated peroxide of iron	q. s.

Digest them together, in a Wedgwood's dish, at a temperature from 120° to 140° Fahr., until no more oxide of iron is dissolved. Then filter and evaporate to dryness at a gentle heat; or, still better, evaporate to a syrupy consistence, spread it out on earthenware plates, and dry it at a gentle heat in a stove. When dry it will separate in scales.

FERRI SULPHAS. *Sulphate of iron.*

Lond. Ph. 1836.

℞	Iron filings	℥viij.
	Sulphuric acid	℥xiv.
	Water	Oiv.

Mix the sulphuric acid with the water, and add the iron to them; then apply heat, and, when bubbles have ceased to escape, strain the liquor, and set it aside that crystals may be formed. Evaporate the liquor poured off, that it may again yield crystals. Dry them all.

Note. Colour, bluish green; dissolved by water. Iron put into the solution does not precipitate copper.

Edin. Ph. 1841.

If the sulphate of iron of commerce be not in transparent green crystals, without efflorescence, dissolve it in its own weight of boiling water acidulated with a little sulphuric acid; filter; and set the solution aside to crystallize. Preserve the crystals in well-closed bottles.

Note.—Pale bluish-green crystals, with little or no efflorescence.

Dubl. Ph. 1826.

℞	Iron, drawn into wire	4 parts.
	Sulphuric acid	7 parts.
	Water	60 parts.

Mix.

Heat being applied, let the metal be dissolved, and the liquor filtered through paper. Finally, after proper evaporation let it be set aside, that by slow refrigeration crystals may be formed.

Med. use. Tonic, in amenorrhœa—anthelmintic. *Dose.* From half a grain to four grains.

FERRI SULPHAS EXSICCATUM. *Dried sulphate of iron.*

Edin. Ph. 1841.

Expose any convenient quantity of sulphate of iron to a moderate heat in a porcelain or earthenware vessel not glazed with lead, till it is converted into a dry grayish white mass, which is to be reduced to powder.

FERRI SULPHURETUM. *Sulphuret of iron.*

Edin. Ph. 1841.

The best sulphuret of iron is made by heating an iron rod to a full white heat in a forge, and rubbing it with a roll of sulphur over a deep vessel filled with water to receive the fused globules of sulphuret which form. An inferior sort, good enough, however, for pharmaceutic purposes, is obtained by heating one part of sublimed sulphur and three of iron filings in a crucible in a common fire till the mixture begins to glow, and then removing the crucible and covering it, until the action, which at first increases considerably, shall come to an end.

Note.—A protosulphuret of iron. Soluble in a great measure in diluted sulphuric acid, with effervescence and disengagement of sulphuretted hydrogen gas.

FERRI PROTOSULPHURETUM HYDRATUM. *Hydrated protosulphuret of iron.*

Add hydrosulphuret of ammonia, or a solution of sulphuret of potassium, to solution of protosulphate of iron as long as a precipitate is formed. Collect the precipitate on a cloth filter, wash it quickly with hot water, squeeze out most of the water, and keep the sulphuret excluded from the air.

This has been recommended as an antidote against poisoning with corrosive sublimate.

FERRI PERSULPHURETUM HYDRATUM. *Hydrated persulphuret of iron.*

Add a solution of persulphate of iron, gradually, to a solution of sulphuret of potassium, as long as any precipitate is formed. Collect, wash, and preserve the precipitate.

Bouchardat recommends this in preference to the protosulphuret as an antidote against poisoning with corrosive sublimate, arsenic, or the salts of lead or copper.

FLUX, (from *fluo*, to flow.) In chemistry, this term is applied to substances employed to assist the fusion of refractory bodies, especially minerals.

Black flux. The residue of the combustion of cream of tartar, consisting of carbonate of potash mixed with finely divided charcoal.

Cornish reducing flux. A mixture of ʒx. of cream of tartar, ℥iijss. of nitre, and ʒiij. of borax.

Crude flux. A mixture of one part of nitre and two of cream of tartar.

White flux. Mix one part of cream of tartar with two parts of nitre, deflagrate the mixture, and reduce the product to powder.

FRENCH POLISH.

1.

℞	Shellac . . .	℥xxij.
	Rectified spirit . .	Oiv.

Dissolve with a gentle heat.

2.

℞	Shellac . . .	℥iv.
	Frankincense . .	℥ss.
	Rectified spirit, or naphtha .	Oj.

Dissolve with a gentle heat.

FULIGOKALI.

Deschamps.

℞	Caustic potash	20 parts
	Soot	100 „
	Distilled water	200 „

Boil for an hour; dilute the decoction with more water; filter it, and evaporate the liquor to dryness. Preserve the dry powder in bottles.

SULPHURETTED FULIGOKALI.

℞	Fuligokali	60 parts
	Sulphur	4 „
	Caustic potash	14 „

Fuse the sulphur and caustic potash together, dissolve the fused mass in a little water, then add the fuligokali and evaporate the solution to dryness.

FULLER'S EARTH, is found in Bedfordshire, Berkshire, Hampshire, Surrey, and other parts of England. Its colour is greenish or yellowish gray; it readily falls to powder when put into water; when exposed to a high heat it fuses into a brown slag. It consists of silica 53; alumina 10; red oxide of iron 9·75; magnesia 1·25; lime 0·5; water 24; and a trace of potash.

FUMIGATIO, (from *fumigo*,) to smoke, or to perfume. *Fumigation.*

The use of fumes, such as those of chlorine, nitric acid, vinegar, &c., for purifying apartments, clothing, furniture, &c., from miasmata or noxious effluvia.

FUMIGATIO AROMATICA. *Aromatic fumigation.*

℞	Olibanum, Amber, Mastic, āā	℥iij.
	Styrax, Benzoin. āā	℥j.

Powder and mix. Sprinkle some of the powder over red hot coals.

FUMIGATIO BALSAMICA. *Balsamic fumigation.*

Benzoin in powder, either alone or mixed with styrax; used in the same way as the last.

FUMIGATIO CHLORINII. *Chlorine fumigation. Guyton's fumigation.*

Codex, 1837.

℞	Chloride of sodium, in powder	300 parts
	Binoxide of manganese	100 „
	Sulphuric acid (D. 1·847)	200 „
	Common water	200 „

Mix the chloride of sodium, oxide of manganese, and water, in a glass or earthenware capsule, and then add the sulphuric acid. Greenish yellow vapours will soon be disengaged, which will become more copious, if the mixture be shaken; for this purpose a glass tube or a porcelain rod should be employed.

The room in which the fumigation is made should be kept perfectly close, at least during half an hour.

The greatest possible care must be taken to avoid inhaling the vapours.

FUMIGATIO MERCURIALIS. *Mercurial fumigation.*

Bouchardat.

℞	Vermilion . . .	1½ part.
	Olibanum, in powder . .	1 „

Mix. Sprinkle the powder over red hot coals, or a heated shovel.

FUMIGATIO ACIDI NITRICI. *Nitric acid fumigation.*

Codex.

℞	Sulphuric acid . . .	64 parts.
	Water	32 „
	Purified nitre . . .	64 „

Mix the acid and water in a porcelain capsule; place this over heated cinders, and throw into it, in small quantities at a time, the powdered nitre.

FUMIGATIO PICIS LIQUIDÆ. *Tar fumigation.*

Put one part of tar and four or five parts of water into a pipkin or any convenient vessel, and boil it in the apartment of the patient, allowing the vapour to escape into the room.

FUSIBLE METAL.

1.

℞	Bismuth . .	8 parts.
	Lead . . .	5 „
	Tin . . .	3 „

Fuse together.

2.

℞	Lead . . .	3 parts.
	Tin . . .	2 „
	Bismuth . .	5 „

Fuse together.

3.

℞	Bismuth . .	2 parts.
	Lead . . .	5 „
	Tin . . .	3 „

Fuse together.

4.

℞	Bismuth . .	8 parts.
	Lead . . .	5 „
	Tin . . .	3 „
	Mercury . .	1 „

Fuse together.

GARANCINE.

The colouring matter of madder, mixed with the carbonized residue resulting from the action of oil of vitriol on the woody fibre, &c., of the madder.

Macerate lbij of good madder in five or six times its weight of cold water for ten or twelve hours, then press out the water; repeat this process two or three times. Having well pressed the madder from the last portion of water, mix the marc, still moist, with lbj of oil of vitriol diluted with lbj of water, and used still hot; heat the mixture to 212_0, and keep it at this temperature for an hour; then dilute it with water, throw it on to a linen strainer, well wash the semi-carbonized madder with cold water, and dry it.

Garancine is in the form of a brownish or puce-coloured powder. It is used in dyeing. It contains the colouring matter of the madder unimpaired, as this is not destroyed by the action of the oil of vitriol.

Gargarisma. (From γαργαριζω, to wash the throat.) *A gargle.* Any preparation used for washing the throat.

Gelatine.

The substances sold under this name are prepared from the skins, bones, and some of the tendons of animals, and probably, sometimes, from inferior kinds of isinglass. Sulphurous acid is sometimes used for decolourizing it.

Gelatina cornu cervi. *Hartshorn jelly.*

Codex.

℞	Hartshorn shavings	℥viij.
	Water	Oiij.
	White sugar	℥iv.
	The juice of 1 lemon.	

Wash the hartshorn; boil it in the water till reduced to one-half; strain and press; add the sugar and lemon-juice; clarify with white of egg; and reduce by boiling, to a gelatinizing consistence.

Gelatina chondri. *Irish moss jelly.*

℞	Irish moss	℥j.
	Water	Oij.

Boil it so as to form a jelly. It may be flavoured with lemon-juice and spices, and sweetened with sugar.

Gelatina fuci amylacei. *Ceylon moss jelly.*

Made in the same way as the last.

Gelatina helminthocorti. *Corsican moss jelly.*

℞	Corsican moss	℥j.
	Water	Oij.
	Isinglass	ʒij.

Boil to half a pint, then add,

White wine	℥j.
Sugar	℥ij.

Mix and strain.

Gelatina icthyocollæ. *Isinglass jelly.*

℞	Isinglass	℥j. or ℥iss.
	Water	Oj.

Dissolve with heat, then add sugar to sweeten, and wine, &c., to flavour it.

Gelatina lichenis. *Iceland moss jelly.*

℞	Iceland moss	℥ij.
	Isinglass	ʒj.
	Sugar	℥iv.
	Water	q. s.

Wash the Iceland moss two or three times in cold water; then boil it for an hour in enough water to yield Oss of decoction; strain and clarify the decoction, and dissolve the sugar and isinglass in it.

GELATINA LICHENIS SICCA. *Dry lichen jelly.*

Berzelius.

Deprive Iceland moss of its bitter principle by macerating it in a weak solution of potash; wash it with cold water to remove the alkali; then boil it in nine times its weight of water, until reduced to one-third; strain and press it; the liquor as it cools will gelatinize; lay this on a folded cloth, which will absorb much of the moisture, and the jelly will then easily separate; finally, dry it with a gentle heat. It will become black and brittle.

GELATINA PANIS. *Panada. Bread jelly.*

Cut a French roll into slices; toast them slightly on each side; boil them in a quart of water, until on cooling it forms a jelly; then flavour it with wine and cinnamon.

GELATINA MARANTÆ. *Arrowroot jelly.*

Mix ℥j of arrowroot with a little cold water into a smooth cream, then add about a pint of boiling water, boil it for a minute or two, and flavour it with wine and spice.

GEMS, ARTIFICIAL.

The artificial imitation of many of the precious stones has been carried to a high degree of perfection. The basis of these artificial gems is a fusible glass, called *paste* or *strass*, which is coloured with different metallic oxides or salts.

Paste or *strass.*

℞ Rock crystal	℥vj.
Red lead	℥ix. ʒii.
Pearl-ash	℥iij. gr. 180.
Boracic acid	gr. 180.
Arsenic	gr. v.

Mix and fuse in a Hessian crucible; keep it fused for twenty-four hours, then let it gradually cool.

Artificial amethyst.

1.

℞ Paste	℥xvj.
Oxide of mangan.	gr. xv. to gr. xxiv.
Oxide of cobalt	gr. j.

Fuse together.

2.

℞ Paste	gr. 4608
Oxide of manganese	gr. 36
Oxide of cobalt	gr. 24
Purple of cassius.	gr. 1

Fuse together

Artificial aventurine.

℞ Paste	300 parts.
Protoxide of copper	40 „
Iron scales	80 „

Fuse the glass, and after the reduction of the copper, let the mixture cool very slowly. The metallic copper will remain diffused through the glass in a crystalline form.

Artificial beryl.

℞	Paste	gr. 3456
	Glass of antimony	gr. 24
	Oxide of cobalt	gr. 1½

Fuse together.

Artificial chrysolite.

℞	Paste	lbv.
	Calcined peroxide of iron	ʒiij.

Fuse together.

Artificial cornelian.

Red.

℞	Paste	lbij.
	Glass of antimony	lbj.
	Calcined peroxide of iron	℥ij.
	Oxide of manganese	ʒj.

Fuse together.

White.

℞	Paste	lbij.
	Calcined bones	℥j.
	Washed yellow ochre	ʒij.

Fuse together.

Artificial diamond.

Peroxide of tin fused at a very high heat.

Artificial emerald.

1.

℞	Paste	gr. 9216
	Acetate of copper	gr. 72
	Peroxide of iron	gr. 1½

Fuse together.

2.

℞	Paste	℥v.
	Oxide of copper	gr. 39
	Oxide of chrome	gr. 2

Fuse together.

Artificial garnet.

1.

℞	Paste	gr. 427
	Glass of antimony	gr. 210
	Oxide of antimony	gr. 2

Fuse together.

2.

℞	Paste	gr. 512
	Glass of antimony	gr. 256
	Purple of cassius	gr. 2
	Oxide of manganese	gr. 2

Fuse together.

Artificial opal.

1.

℞	Paste	lbx.
	Calcined bones	lbss.

Fuse together.

2.

℞	Paste	℥j.
	Horn silver	gr. x.
	Calcined bones	gr. xxvj.
	Magnetic oxide of iron	gr. ij.

Fuse together.

Artificial ruby.

1.

℞	Paste	℥v.
	Oxide of manganese	ʒj.

Fuse together.

2.

℞	Paste	℥xvj.
	Purple of cassius,	
	Peroxide of iron,	
	Golden sulphuret of antimony,	
	Manganese calcined with nitre, āā	gr. 168
	Rock crystal	℥ij.

Fuse together.

Artificial sapphire.

1.

℞	Paste	gr. 4608
	Oxide of cobalt	gr. 68

Fuse together for thirty hours.

2.

℞	Paste	℥viij.
	Oxide of cobalt	gr. 49
	Oxide of manganese, a few grains.	

Fuse together.

Artificial topaz.

1.

℞	Paste	gr. 840
	Glass of antimony	gr. 36
	Purple of cassius	gr. 1

Fuse together.

2.

℞	Paste	gr. 3456
	Peroxide of iron	gr. 36

Fuse together.

GERMAN PASTE.

℞	Pea meal	lbij.
	Sweet almonds, blanched	lbj.
	Fresh butter	℥iij.

Beat all up together, add a little honey and saffron, and pass it through a coarse sieve to granulate it. The yolks of two eggs are sometimes added, but with this addition it is considered too fattening for the birds. It will keep good for six months.

Use. For feeding nightingales, larks, and other insectivorous birds.

GINGERBREAD.

1.

℞	Fine flour	lbj.
	Treacle	℥viij.
	Carbonate of potash	℥ss.
	Butter	℥j.
	Powdered ginger	ʒiv.
	Powdered cinnamon,	
	„ Nutmeg,	
	„ Allspice, āā	ʒj.

Warm water, sufficient to form a dough. It will require to stand for several days, sometimes a fortnight, before it is fit for the oven, as the rising depends on the slow action of the acid in the treacle on the carbonate of potash.

2.

℞	Fine flour	lbj.
	Carbonate of magnesia	ʒij.
	Treacle	lbss.
	Moist sugar	℥iij.
	Tartaric acid	ʒj.
	Butter	℥ij.
	Ginger, Cinnamon, āā	ʒj.
	Nutmeg	℥j.

Mix into a paste with warm water; let it stand for *half an hour*, and then put it into the oven. This should not be kept longer than two or three hours, at farthest, before putting it into the oven.

GLAZE, *for earthenware.*

1. *For common ware.*

℞	White lead	53 parts.
	Cornish stone	16 „
	Ground flints	36 „
	Flint glass	4 „

Powder, and mix into a thin paste with water.

2. *For metallic colours.*

℞ White felspar, 26 parts fritted with

	Soda	6 parts.
	Nitre	2 „
	Borax	1 „

℞	Of the above	20 parts.
	Felspar	26 „
	White lead	20 „
	Ground flints	6 „
	Chalk	4 „
	Oxide of tin	1 „

Mix into a thin paste with water.

3.

℞	Flint glass	20 parts.
	Flints	6 „
	Nitre	2 „
	Borax	1 „

Frit these together, then

℞	Of the above	12 parts.
	White lead	40 „
	Felspar	36 „
	Flints	8 „
	Flint glass	6 „

Powder, and mix into a thin paste with water.

4. *For stone ware.*

℞	Frit of glaze, No. 2	13 parts.
	Red lead	50 „
	White lead	40 „
	Flints	12 „

Powder, and mix into a thin paste with water.

GLOBULI CONTRAYERVÆ. *Lapis contrayervæ. Contrayerva balls.*

℞	Prepared crab's claws	lbj.
	Prepared red coral,	
	Prepared pearls, āā	℥iij.
	Powdered contrayerva root	℥xv.

Mix, and form into balls with mucilage of gum arabic.

GLOBULI GASCOIGNII. *Pulvis bezoardicus. Gascoign's balls. Bezoardic powder.*

℞	Prepared crab's claws	lbj.
	Prepared pearls,	
	Prepared red coral, āā	℥iij.
	Oriental bezoar	℥iss.

Mix, and form into balls with mucilage of gum arabic.

GLYCERINE. ($C^6H^8O^6$.)

A sweet syrupy substance, resulting from the decomposition of olive oil, or other fixed oils, in the process of saponification. It is most easily obtained, by evaporating the water used in making lead plaster. It has been employed as a topical application, for burns, &c., and as an addition to poultices to prevent their becoming dry.

GUTTA PERCHA. A variety of caoutchouc or India-rubber, brought from Singapore. It is a white or dirty-pinkish-coloured opaque solid, having a specific gravity 0·979. It has a silky fibrous texture, and feels smooth or greasy between the fingers. It is imported in the form of thin layers, resembling clippings of white leather, and solid masses, which appear to be formed of many of the layers pressed and united together. At temperatures below 50° it is hard, very tough, and but slightly flexible. At from 50° to 70° it becomes more elastic. When forcibly extended it shows very little power of contraction, and it requires considerable force to extend it. In this respect it differs from common caoutchouc. At a temperature between 140° and 160°, it becomes soft and very plastic, and its tenacity is greatly diminished. In this state, pieces may be joined together, or it may be moulded into any form, like soft wax. When submitted to destructive distillation it yields a volatile oil similar to that afforded by caoutchouc, with which it is identical in chemical composition.

It is said to be obtained from a tree indigenous to Singapore, and related to the Sapotaceæ and Ebinaceæ.

HEMATITE.

A native reddish-brown peroxide of iron. It occurs abundantly in Cumberland.

HERBÆ PRO ENEMATE. *Herbs for glyster.*

℞	Mallow leaves	2 parts.
	Chamomile flowers	1 part.

Mix.

HERBÆ PRO FOTU. *Herbs for fomentation.*

℞	Southernwood leaves, Tops of sea wormwood, and Chamomile flowers, āā	2 parts.
	Bay leaves	1 part.

Mix.

HERBÆ QUINQUE CAPILLARES. *Five capillary herbs.*

Hart's tongue, Black, White, and Golden maidenhair, and Spleen-wort.

HERBÆ QUINQUE EMOLLIENTES. *Five emollient herbs.*

Beet, Mallow, Marsh mallow, French mercury, and Violet.

HIERA PICRA. (From ιερος, holy, and πικρος, bitter.) *Pulvis aloes cum canella.*

Lond. Ph. 1746.

℞	Powdered socotrine aloes	1
	Powdered canella alba	lbj.

Mix.

It was at one time kept in the form of an electuary, called *Hiera logadii.*

HYDRARGYRUM. *Mercury. Symb.* Hg. *eq.* 202 *or* 101·43. Metallic mercury is obtained from the sulphuret which is the principal ore of it. Specific gravity 13·56 at 60°. Boiling point 662°.

HYDRARGYRUM PURIFICATUM. *Purified mercury.*

Dubl. Ph. 1826.

℞	Mercury	6 parts.

Let four parts be slowly distilled.

The best method of purifying mercury from lead, tin, bismuth, &c., with which it may be contaminated, is to heat it to about 110° Fah., then to add a small quantity of solution of pernitrate of mercury, and shake them together. The mercury must be afterwards strained.

Tests of purity. Lond. Ph. 1836.

Totally dissipated in vapour by heat. Dissolved by diluted nitric acid. When boiled in hydrochloric acid, the acid when cold is not coloured, nor is anything precipitated from it by hydrosulphuric acid. Its specific gravity is 13·5.

Edin. Ph. 1841.

Entirely sublimed by heat: a globule moved along a sheet of paper leaves no trail: pure sulphuric acid agitated with it evaporates when heated without leaving any residuum.

HYDRARGYRUM CUM CRETA. *Mercury with chalk.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Mercury	ʒiij.
	Prepared chalk	℥v.

Rub them together until globules are no longer visible.

Note.—Part is evaporated by heat; what remains is colourless, and totally soluble in acetic acid with effervescence; this solution is not coloured by hydrosulphuric acid. These substances can scarcely be so diligently triturated as that no globules shall be visible.

Dubl. Ph. 1826.

This is to be prepared by a method similar to that employed in preparing the Hydr. c. magnesia, except that precipitated carbonate of lime is to be employed, in place of the carbonate of magnesia.

HYDRARGYRUM CUM MAGNESIA. *Mercury with magnesia.*

Dub. Ph. 1826.

℞	Purified mercury, Manna, āā	2 parts,
	Carbonate of magnesia	1 part.

Rub the mercury with the manna in an earthenware mortar, adding a few drops of water, that the mixture may have the consistency of a syrup, and that the metallic globules, by continued trituration may disappear; then add, still triturating, an eighth part of carbonate of magnesia. To the whole, thoroughly mixed, add of warm water sixteen parts, and let the mixture be stirred; then let it rest, and as soon as the sediment has subsided, let the liquor be decanted; repeat the washing again, and a third time, that the manna may be completely washed off, then mix with the sediment, whilst moist, the remainder of the carbonate of magnesia. Lastly, let the powder be dried on bibulous paper.

HYDRARGYRI ACETAS. *Acetate of mercury.*

Dubl. Ph. 1826.

℞	Purified mercury	
	Acetate of potash, āā	9 parts.
	Diluted nitric acid	11 parts.
	Boiling distilled water	100 parts.
	Distilled vinegar	q. s.

Let the nitric acid be added to the mercury, and when the effervescence has ceased let the mixture be digested, that the metal may be dissolved; let the acetate of potash be dissolved in water, and let the distilled vinegar be added until the acid shall predominate in the liquor: to this, whilst boiling, let the solution of the mercury in the nitric acid be added, and let the mixture be filtered as quickly as possible through a double linen cloth; let it cool that crystals may form; having washed them with cold distilled water, dry them on paper with a very gentle heat. In every step of this process let glass vessels be employed.

Use. Employed as the active ingredient of Keyser's pills.

HYDRARGYRI CHLORIDUM. *Chloride of mercury.*

Lond. Ph. 1836.

℞ Mercury	lbiv.
Sulphuric acid	lbiij.
Chloride of sodium	lbiss.
Distilled water	q. s.

Boil 2 pounds of the mercury with the sulphuric acid in a proper vessel, until the bipersulphate of mercury remains dry; rub this when it is cold with [the remaining] 2 pounds of mercury in an earthen mortar, that they may be perfectly mixed. Afterwards add the chloride of sodium, and rub them together until globules are no longer visible; then sublime. Rub the sublimate to very fine powder, and wash it carefully with boiling distilled water, and dry it.

Note.—A whitish powder, which, on the addition of potash, becomes black, and then, when heated, runs into globules of mercury. It is also totally vapourized by heat. The distilled water with which it has been washed, or in which it has been boiled, gives no precipitate with nitrate of silver, lime-water, nor hydrosulphuric acid.

Edin. Ph. 1841. *Calomelas.*

℞ Mercury	℥viij.
Sulphuric acid (commercial)	f℥ij and fʒiij.
Pure nitric acid	f℥ss.
Muriatic soda	℥iij.

Mix the acids, add 4 ounces of the mercury, and dissolve it with the acid of a moderate heat. Raise the heat so as to obtain a dry salt. Triturate this with the muriate of soda and the rest of the mercury till the globules entirely disappear. Heat the mixture by means of a sand-bath in a proper subliming apparatus. Reduce the sublimate to fine powder; wash the powder with boiling distilled water until the water ceases to precipitate with solution of iodide of potassium; and then dry it.

Note.—Heat sublimes it without any residuum; sulphuric ether agitated with it, filtered, and then evaporated to dryness, leaves no crystalline residuum, and what residuum may be left is not turned yellow by aqua potassæ.

Dubl. Ph. 1826. *Calomelas sublimatum.*

℞ Persulphate of mercury	25 parts.
Purified mercury	17 parts.
Dried muriate of soda	10 parts.

Let the persulphate of mercury and purified mercury be triturated together in an earthenware mortar, until the metallic globules shall have completely disappeared, then let the dried muriate of soda be added: let them be well mixed, and in a suitable vessel with a heat gradually raised, let them be sublimed into a receiver; let the sublimed mass be reduced to powder and washed with water, so long as the decanted liquor, on addition of water of caustic potash, shall exhibit any deposition. Lastly, let the sublimed calomel be dried.

Dubl. Ph. 1826. *Calomelas præcipitatum.*

℞ Purified mercury	17 parts.
Diluted nitric acid	15 parts.

On the mercury passed into a glass vessel pour the acid, and when the mixture shall have ceased to effervesce, digest with a *medium* heat during six hours, occasionally stirring it; then let the heat be increased that the liquor may boil for a short time, and let this be poured off from the residual mercury, and quickly mixed with 400 parts of boiling water, containing 7 parts of muriate of soda in solution. Let the powder which falls down be washed with warm water, so long as the decanted liquor, on addition of some drops of water of caustic potash, shall form any deposit. Lastly, let it be dried.

Med. use. Purgative. *Dose.* From gr. ij. to gr. x. Alterative in doses of about gr. j. or gr. iss.

HYDRARGYRI BICHLORIDUM. *Bichloride of mercury.*

Lond. Ph. 1836.

℞ Mercury	℔ij.
Sulphuric acid	℔iij.
Chloride of sodium . . .	℔iss.

Boil down the mercury with the sulphuric acid in a proper vessel, until the bipersulphate of mercury remains dry; rub this, when it is cold, with the chloride of sodium in an earthen mortar; then sublime with a heat gradually raised.

Note.—The bichloride of mercury (*crystalline*) liquefies by heat and sublimes. It is totally soluble in water and sulphuric æther. Whatever is thrown down from water, either by solution of potash or lime-water, is of a reddish colour; or, if a sufficient quantity be added, it is yellow; this yellow substance, by heat, emits oxygen, and runs into globules of mercury.

Edin. Ph. 1841. *Sublimatus corrosivus.*

℞ Mercury . . .	℥iv.
Sulphuric acid (commercial) .	f℥ij and fʒiij.
Pure nitric acid . .	f℥ss.
Muriate of soda . .	℥iij.

Mix the acids, add the mercury, dissolve it with the aid of a moderate heat, and then raise the heat so as to obtain a dry salt. Triturate this thoroughly with the muriate of soda, and sublime in a proper apparatus.

Note.—It sublimes entirely by heat; and its powder is entirely and easily soluble in sulphuric æther.

Dubl. Ph. 1826. *Hydrargyri murias corrosivum.*

℞ Persulphate of mercury . .	5 parts.
Dried muriate of soda . .	2 parts.

Let them be well rubbed together in an earthenware mortar, that a most subtle powder may be formed, then, with a heat gradually raised, let the corrosive muriate of mercury be sublimed into a proper receiver.

Med. use. In secondary syphilis, and in some affections of the skin, as lepra. *Dose.* From one-eighth to one-fourth of a grain.

LIQUOR HYDRARGYRI BICHLORIDI. *Solution of bichloride of mercury.*

Lond. Ph. 1836.

℞ Bichloride of mercury	
Hydrochlorate of ammonia, āā . .	gr. x.
Distilled water	Oj.

Dissolve the bichloride of mercury and hydrochlorate of ammonia together in the water.

Use. As an antisyphilitic, in the dose of from fʒss to fʒij in f℥ij of linseed infusion. Sometimes used externally as a wash in some cutaneous affections.

HYDRARGYRI AMMONIO-CHLORIDUM. *Ammonio-chloride of mercury* (or white precipitated mercury).

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Bichloride of mercury . . .	℥vj.
	Distilled water . . .	Ovj.
	Solution of ammonia . . .	f℥viij.

Dissolve the bichloride of mercury, with the application of heat, in the water. To this, when it is cold, add the solution of ammonia, frequently stirring. Wash the powder thrown down until it is free from taste. Lastly, dry it.

Note.—Totally evaporated by heat. When digested with acetic acid, iodide of potassium throws down nothing either yellow or blue. The powder, rubbed with lime-water, does not become black. It is totally dissolved by hydrochloric acid without effervescence. When heated with solution of potash it becomes yellow, and emits ammonia.

HYDRARGYRI SUBMURIAS AMMONIATUM. *Ammoniated submuriate of mercury.*

Dubl. Ph. 1826.

Add to the liquor poured off from precipitated calomel as much water of caustic ammonia as may be sufficient completely to throw down the metallic salt, which is to be washed with cold water and dried on bibulous paper.

Use. Only used in combination with lead in the form of ointment in the treatment of some cutaneous affections.

HYDRARGYRI ET AMMONII CHLORIDUM. *Chloride of mercury and ammonium. Sal alembroth.*

℞	Bichloride of mercury,	
	Hydrochlorate of ammonia, āā . .	℥j.

Mix intimately together.

The object in adding the salammoniac, here, is to render the corrosive sublimate more soluble in water. The action of the latter is not otherwise altered.

HYDRARGYRI BICYANIDUM. *Bicyanide of mercury.*

Lond. Ph. 1836.

℞	Percyanide of iron . . .	℥viij.
	Binoxide of mercury . . .	℥x.
	Distilled water	Oiv.

Boil them together for half an hour and strain; evaporate the liquor that crystals may be formed; wash what remains frequently with boiling distilled water, and again evaporate the mixed liquor that crystals may be formed.

Bicyanide of mercury may be otherwise prepared by adding as much binoxide of mercury as will accurately saturate it, to hydrocyanic acid distilled from ferrocyanide of potassium with diluted sulphuric acid.

Note. Transparent and totally soluble in water. The solution, when hydrochloric acid is added, emits hydrocyanic acid, which is known by its peculiar smell; and a glass moistened with the solution of nitrate of silver and placed over it, gives a deposit, which is dissolved by boiling nitric acid. By heat it emits cyanogen, and runs into globules of mercury.

Dubl. Ph. 1826. *Hydrargyri Cyanuretum.*

℞	Cyanuret of iron	6 parts.
	Nitric oxide of mercury	5 "
	Distilled water	40 "

Let the cyanuret of iron and oxide of mercury be mixed, and then added to the water previously warmed. Boil the mixture with continual stirring during half an hour, and filter through bibulous paper. Let the residue be frequently washed with warm distilled water. Lastly, let the filtered liquor evaporate, and by its cooling let crystals form.

Med. use. Employed in the same cases, and *dose* as the bichloride of mercury.

HYDRARGYRI IODIDUM. *Iodide of mercury.*

Lond. Ph. 1836.

℞	Mercury	℥i.
	Iodine	ʒv.
	Alcohol	q. s.

Rub the mercury and iodine together, adding the alcohol gradually, until globules are no longer visible. Dry the powder immediately with a gentle heat, without the access of light, and keep in a well-stopped vessel.

Note. When recently prepared, it is yellowish, and when heat is cautiously applied, it sublimes in red crystals, which afterwards become yellow, and then by access of light they blacken. It is not soluble in chloride of sodium.

Med. use. Alterative, in scrofula. *Dose*, gr. one eighth to gr. one-half, in pills.

HYDRARGYRI BINIODIDUM. *Biniodide of mercury.*

Lond. Ph. 1836.

℞	Mercury	℥i.
	Iodine	ʒx.
	Alcohol	q. s.

Rub the mercury and iodine together, adding the alcohol gradually, until globules are no longer visible. Dry the powder with a gentle heat, and keep it in a well-stopped vessel.

Note. By heat continually applied it is sublimed in scales, which soon become yellow, and afterwards, when they are cold, red. It is partially soluble in boiling rectified spirit, which affords crystals as it cools. It is alternately dissolved and precipitated by iodide of potassium and bichloride of mercury. It is totally soluble in chloride of sodium.

Edin. Ph. 1841.

℞	Mercury	℥ij.
	Iodine	℥iiss.
	Concentrated solution of muriate of soda	cong. j.

Triturate the mercury and iodine together, adding occasionally a little rectified spirit till a uniform red powder be obtained. Reduce the product to fine powder, and dissolve it in the solution of muriate of soda with the aid of brisk ebullition. Filter, if necessary, through calico, keeping the funnel hot; wash and dry the crystals which form on cooling.

Note. Entirely vaporizable; soluble entirely in 40 parts of a concentrated solution of muriate of soda at 212°. and again deposited in fine red crystals on cooling.

Med. use. Alterative. *Dose*, gr. one-twelfth to gr. one quarter, in pill with crumb of bread.

HYDRARGYRI IODO-CHLORIDUM. *Iodo-chloride of mercury. Iodhydrargyrate of chloride of mercury.*

Boutigny.

Suspend crystals of calomel in a stoppered bottle, at the bottom of which is put some iodine. After some time the calomel will assume a red colour without any alteration taking place in its crystalline form. The iodine vapour appears to combine with the salt, but the precise nature of the resulting compound has not been determined.

HYDRARGYRI IODO-BICHLORIDUM. *Iodo-bichloride of mercury. Iodhydrargyrate of perchloride of mercury.*

Caventou.

℞ Bichloride of mercury,
Biniodide of mercury, āā . . p. æ.

Dissolve the bichloride of mercury in rectified spirit, then add the biniodide, and having completed the solution, evaporate it to dryness. The product is said not to be a perfect double salt. It has been recommended by M. Récamier as more active than either of its constituents, in removing tumours, &c. It is used in the form of ointment.

HYDRARGYRI ET POTASSII IODIDUM. *Iodide of mercury and potassium. Iodo-hydrargyrate of potassium. Iodhydrargyrate of iodide of potassium.*

Boullay.

℞ Biniodide of mercury,
Iodide of potassium, āā . p. æ.

Dissolve in water, and evaporate to dryness; the product is an uncrystallizable salt.

Puche.

℞ Biniodide of mercury,
Iodide of potassium, āā . p. æ.

Mix the salts together in a mortar.

Dr. Channing.

℞ Iodide of potassium . . .	gr. iiss.
Biniodide of mercury . .	gr. ivss.
Distilled water . . .	f℥j.

Dissolve, first the iodide of potassium, and then the biniodide of mercury in the water.

Dose. From two to five drops of Dr. Channing's solution three times a day, in chronic bronchitis, hooping-cough, tonsillitis, and some cutaneous diseases.

HYDRARGYRI ET POTASSII IODO-CYANIDUM. *Hydrargyro-iodo-cyanide of potassium.*

Dr. Geogegan.

To a solution of iodide of potassium in water, add a concentrated solution of bicyanide of mercury; the double salt in the form of white pearly crystalline plates, will be immediately deposited.

Use. This salt is used as a test of the purity of hydrocyanic acid, which when pure has no action upon it, but if there be any mineral acid present, it will decompose the salt, giving rise to the formation of red biniodide of mercury, which is distinguished by its colour.

HYDRARGYRI NITRATIS ACIDUM. *Acid nitrate of mercury.*

Dr. H. Bennet.

℞	Mercury	4 parts.
	Nitric acid	8 „

Introduce the ingredients into a retort, and when solution is effected, reduce the quantity, by evaporation, to nine parts.

The preparation thus made is a dense solution of pernitrate of mercury in excess of nitric acid. It is used as a fluid caustic.

HYDRARGYRI OXYDUM. *Oxide of mercury.*

Lond. Ph. 1836.

℞	Chloride of mercury .	ʒj.
	Lime water . .	conj. j.

Mix and frequently shake them. Set by, and when the oxide has subsided, pour off the liquor. Lastly, wash it in distilled water until nothing alkaline can be perceived, and dry it, wrapped in bibulous paper, in the air.

Note. — Digested for a short time with diluted hydrochloric acid and strained, neither solution of potash nor oxalate of ammonia throws down any thing. It is totally soluble in acetic acid. By heat it is entirely dissipated.

Dubl. Ph. 1826. *Hydrargyri oxydum nigrum.*

℞	Sublimed calomel .	1 part.
	Water of caustic potash, made warm . .	4 parts.

Let them be triturated together until an oxide of a black colour is obtained, and let this be frequently washed with water. Lastly, let the oxide be dried with a *medium* heat on bibulous paper.

Med. use. Alterative. *Dose,* gr. i. to gr. iij. in the form of pill.

HYDRARGYRI BINOXIDUM. *Binoxide of mercury.*

Lond. Ph. 1836.

℞	Bichloride of mercury . .	℥iv.
	Solution of potash . . .	f℥xxviij.
	Distilled water . . :	Ovj.

Dissolve the bichloride of mercury in the water; strain and add the solution of potash. The liquor being poured off, wash, in distilled water, the powder thrown down, until nothing alkaline can be perceived, and dry it with a gentle heat.

Note.—On the application of heat it yields oxygen, and the mercury either runs into globules or is totally dissipated. It is entirely soluble in hydrochloric acid.

Lond. Ph. 1836. *Hydrargyri nitrico-oxydum.*

℞	
Mercury	lbiij.
Nitric acid	lbiss.
Distilled water . . .	Oij.

Mix them in a proper vessel and apply a gentle heat until the mercury is dissolved. Boil down the liquor, and rub what remains to powder. Put this into another very shallow vessel; then apply a slow fire, and gradually increase until red vapour ceases to arise.

Note. On the application of heat no nitric acid is emitted. Neither lime-water nor hydrosulphuric acid throws down any thing from the water in which it has been boiled. In other respects it resembles the *Hydrargyri binoxydum.*

Edin. Ph. 1841. *Hydrargyri oxidum rubrum.*

℞	
Mercury	℥viij.
Diluted nitric acid (D. 1280),	f℥v.

Dissolve half of the mercury in the acid with the aid of a moderate heat; and continue the heat till a dry salt is formed. Triturate the rest of the mercury with the salt till a fine uniform powder be obtained; heat the powder in a porcelain vessel and constantly stir it, till acid fumes cease to be discharged.

Note. This is a binoxide of mercury, called also *red precipitate.* Entirely soluble in muriatic acid: heat decomposes and sublimes it entirely in metallic globules, without any discharge of nitrous fumes.

Dubl. Ph. 1826. *Hydrargyri oxydum nitricum.*

℞	
Purified mercury . . .	2 parts.
Diluted nitric acid . . .	3 ,,

Let the mercury be dissolved, and let heat be applied until the dried mass passes into red scales.

Dubl. Ph. 1826. *Hydrargyri oxydum rubrum.*

Take of purified mercury any required quantity; pass it into a glass vessel with a narrow mouth and extended bottom. Let it be exposed to a heat of about six hundred degrees, until it is converted into scales.

HYDRARGYRI PERSULPHAS. *Persulphate of mercury.*
Dubl. Ph. 1826.

℞	
Purified mercury, Sulphuric acid, āā . . .	6 parts.
Nitric acid	1 part.

Let them be exposed to heat in a glass vessel, and let the fire be increased until the thoroughly dried residue shall have become white.

Use. For making the bichloride of mercury.

HYDRARGYRI OXYDUM SULPHURICUM. *Sulphuric oxide of mercury. Turpith mineral. Hydrargyri subsulphas.*
Dubl. Ph. 1826.

℞	
Persulphate of mercury . . .	1 part.
Warm water . . .	20 parts.

Triturate them together in an earthenware mortar, and pour off the supernatant liquor; let the yellow powder be washed with distilled water, so long as the decanted fluid exhibits any deposit on the addition of some drops of the water of caustic potash. Lastly, let the sulphuric oxide of mercury be dried.

HYDRARGYRI PHOSPHAS. *Phosphate of mercury.*

Prus. Pharm.

To a solution of nitrate of mercury slightly acidulated with nitric acid, add solution of phosphate of soda as long as any precipitate is formed. Collect, wash, and dry the precipitate.

HYDRARGYRI PRÆCIPITATUM NIGRUM. *Hahnemann's soluble mercury.*

Dissolve protonitrate of mercury by triturating it, in a porcelain mortar, with water acidulated with nitric acid, until the whole of the salt is dissolved, using the smallest possible quantity of acid. Then drop in solution of ammonia diluted with 30 or 40 times its weight of water, constantly stirring the mixture, and continuing the addition of the ammonia only while the colour of the precipitate is black. Collect and wash the precipitate, and dry it with a gentle heat.

HYDRARGYRI SULPHURETUM CUM SULPHURE. *Sulphuret of mercury with sulphur. Ethiop's mineral.*

Lond. Ph. 1836.

℞ Mercury,
Sulphur, āā . . . lbj.

Rub them together, until globules are no longer visible.

Note. Totally evaporates by heat, no charcoal or phosphate of lime being left.

Dub. Ph. 1826. *Hydrargyri sulphuretum nigrum.*

℞ Purified mercury,
Sublimed sulphur, āā . 1 part

Rub them together in a stone-ware mortar, until the globules shall have disappeared.

Med. use. Alterative. *Dose.* gr. v. to gr. xxx.

HYDRARGYRI BISULPHURETUM. *Bisulphuret of mercury.*

Lond. Ph. 1836.

℞ Mercury . . . . lbij.
Sulphur . . . . ℥v.

Mix the mercury with the sulphur melted over the fire, and, as the mass swells, remove the vessel from the fire, and cover it strongly lest inflammation should occur; then rub the mass to powder, and sublime it.

Note. Totally evaporated by heat, and on potash being added to it, it runs into globules of mercury. It is not dissolved either by nitric or hydrochloric acid, but is so by a mixture of them. Rectified spirit, with which it has been boiled or washed, acquires no red colour. Digested with acetic acid it yields no yellow precipitate by iodide of potassium.

Edin. Ph. 1841. *Cinnabaris.*

℞ Mercury . . . . lbij.
Sulphur . . . . ℥v.

Melt the sulphur, add the mercury, and continue the heat till the mixture begins to swell up—then remove the vessel, and cover it closely to prevent the mixture taking fire. When the material is cold, reduce it to powder, and sublime it.

Note. It is sublimed entirely by heat, and without any metallic globules being formed.

Dubl. Ph. 1826. *Hydrargyri sulphuretum rubrum.*

℞ Purified mercury . . . 19 parts.
Sublimed sulphur . . . 3 „

Mix the mercury with the melted sulphur, and if the mixture takes fire, extinguish the flame by covering the vessel.

Reduce to powder the product of the operation, and sublime it.

Use. Alterative and deobstruent. Seldom prescribed.

HYDRARGYRI TARTRAS. *Tartrate of mercury.*

Dissolve protonitrate of mercury in water slightly acidulated with nitric acid, and add to it solution of tartrate of potash as long as any precipitate is formed.

INDIAN YELLOW. *Purree.* A yellow pigment brought from India, used in oil and water-colour painting. Differences of opinion exist as to its origin. It has been said to be obtained from camel's urine, from elephant's urine, from the gall bladder of a species of ox, as well as from other sources, both animal and vegetable. It has been examined by Erdmann and by Stenhouse, who have obtained from it an acid, called by the former *euxanthinic acid*, by the latter *purreic acid.*

INDIGO. *Pigmentum Indicum.* This valuable pigment is obtained from several plants which grow in the East and West Indies, in the middle regions of America, in Africa, and in some parts of Europe.

Two methods are adopted for extracting the indigo from the plants:—1. By the fermentation of the fresh leaves and stems. 2. By the maceration of the dried leaves.

1. *The fermentation of the fresh leaves.* The cuttings of the plants are put into large vats together with sufficient water to cover them. Fermentation soon commences, which is allowed to continue from 12 to 24 hours, at a temperature about 85° Fahr. The liquor is then drawn off into another vat, in which it is agitated with flat sticks or paddle-wheels, until from exposure to the air, the indigo separates from the liquor and assumes the proper colour. It is then allowed to deposit, and the liquor decanted off.

2. *Extraction of indigo from the dried leaves.* The ripe plant being cut, is well dried in the sunshine; it is then threshed to separate the leaves from the stems. The dry leaves are stored in magazines, where they undergo an important change in about four weeks. When first dried they have a fine green colour, but this changes to a pale blue-gray. Previously to this change they yield very little indigo on maceration, but after the change they yield a great deal. The leaves are now macerated in a vat with five or six times their bulk of water for about two hours, being constantly stirred during this time. The liquor is then drawn off into another vat, and the process continued as in the previous case.

INFUSUM ANTHEMIDIS. *Infusion of chamomile.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Chamomile	℥v.
	Distilled water, boiling	Oj.

Macerate for ten minutes, in a vessel lightly covered, and strain.—*Lond.*

Infuse for twenty minutes in a covered vessel, and then strain.—*Edin.*

Dub. Ph. 1826. *Infusum Chamæmeli.*

℞	Chamomile flowers	ʒij.
	Boiling water	℥viij.

Digest for twenty-four hours in a covered vessel, and strain through linen.

Med. use. Stomachic and tonic: the infusion made with cold water is said to be more grateful than that made with hot. This infusion, when taken warm, is very effectual in promoting the action of emetics. *Dose.* ℥i to ℥ij.

INFUSUM ARMORACIÆ COMPOSITUM. *Compound infusion of horse-radish.*

Lond. Ph. 1836.

℞	Horse-radish, sliced,	
	Mustard, bruised, āā	℥j.
	Compound spirit of horse-radish	f℥j.
	Distilled water, boiling	Oj.

Macerate the root and the seeds in the water for two hours, in a vessel lightly covered, and strain; then add the compound spirit of horse-radish.

Dubl. Ph. 1826.

℞	Fresh horse-radish root, sliced,	
	Mustard seeds, bruised, āā	℥j.
	Comp. spirit of horse-radish	℥j.
	Boiling water	℥xvj.

Digest the root in the water for six hours in a covered vessel, and strain; then add the compound spirit of horse-radish.

Med. use. Stimulant, diuretic, and given in paralysis and in dropsies after intermittents. *Dose.* One or two ounces.

INFUSUM ARNICÆ MONTANÆ. *Infusion of leopard's bane.*

Niemann and Ratier.

℞	Arnica flowers	℥ss.
	Boiling water	Oj.

Macerate for two hours, and filter through paper.

INFUSUM AURANTII COMPOSITUM. *Compound infusion of orange [peel].* Lond. & Dubl. *Infusum aurantii.* Edin.

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Orange-peel, dried	℥ss.
	Lemon-peel, fresh	ʒij.
	Cloves, bruised	ʒj.
	Distilled water, boiling	Oj.

Macerate for a quarter of an hour, in a vessel lightly covered, and strain.

Dubl. Ph. 1826.

℞	Dried orange-peel	ʒij.
	Fresh lemon-peel	ʒj.
	Cloves, bruised	ʒss.
	Boiling water	℥viij.

Digest for a quarter of an hour in a closed vessel, and strain.

Med. use. Stomachic. *Dose.* f℥j. to f℥ij.

INFUSUM CALUMBÆ. *Infusion of Calumba.*

Lond. Ph. 1836.

℞ Calumba, sliced . . ʒv.
Distilled water, boiling . Oj.

Macerate for two hours, in a vessel lightly covered, and strain.

Edin. Ph. 1841.

℞ Calumba, in coarse powder ℥ss.
Cold water, about a pint.

Triturate the calumba with a little of the water, so as to moisten it thoroughly; put it into a percolator, and transmit cold water, till sixteen fluidounces of infusion be obtained.

Dubl. Ph. 1826.

℞ Colomba root, sliced . . . ʒij.
Boiling water . . . ℥viij.

Digest for two hours in a close vessel, and strain.

Med. use. Stomachic and tonic. *Dose.* f℥iss to f℥ij.

INFUSUM CARYOPHYLLI. *Infusion of clove.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Cloves, bruised . . ʒiij.
Distilled water, boiling . Oj.

Macerate for two hours in a vessel lightly covered, and strain.

Dubl. Ph. 1826.

℞ Cloves, bruised . . ʒj.
Boiling water . . ℥viij.

Digest for two hours in a closed vessel, and strain.

Med. use. A warm stomachic and useful in flatulent colic, chronic gout, and dyspepsia. *Dose.* From ℥j to ℥ij.

INFUSUM CASCARILLÆ. *Infusion of cascarilla.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Cascarilla, bruised . . ℥iss.
Distilled water, boiling . Oj.

Macerate for two hours in a vessel lightly covered, and strain.

Dubl. Ph. 1826.

℞ Cascarilla bark, bruised . ℥ss.
Boiling water . . ℥viij.

Digest for two hours in a closed vessel, and strain.

Med. use. A light bitter tonic in cases of dyspepsia. *Dose.* f℥j to f℥iij.

INFUSUM CATECHU COMPOSITUM. *Compound infusion of catechu.*

Lond. Ph. 1836.

℞ Extract of catechu, powdered ʒvj.
Cinnamon, bruised . . ʒj.
Distilled water, boiling . . Oj.

Macerate for an hour in a vessel lightly covered, and strain.

Edin. Ph. 1841. *Infusum catechu.*

℞ Catechu, in powder . ʒvj.
Cinnamon, in powder . ʒj.
Syrup . . . . f℥iij.
Boiling water . . . f℥xvij.

Infuse the catechu and cinnamon with the water for two hours, strain through linen or calico, and add the syrup.

Dubl. Ph. 1826.

℞	Extract of catechu	ʒiiss.
	Cinnamon bark, bruised	ʒss.
	Boiling water	℥viij.

Digest for an hour in a covered vessel, and strain through linen.

Med. use. A powerful astringent. *Dose.* ℥j or ℥ij every third or fourth hour.

INFUSUM CHIRETTÆ. *Infusion of chiretta.*

Edin. Ph. 1841.

℞	Chiretta	ʒiv.
	Boiling water	Oj.

Infuse for two hours, and strain through linen or calico.

Med. use. A bitter vehicle for alkalies and the salts of iron in atonic dyspepsia. *Dose.* f℥ij three times a day.

INFUSUM CINCHONÆ. *Infusion of cinchona.*

Lond. Ph. 1836.

℞	Lance-leaved cinchona [pale bark], bruised	℥j.
	Distilled water, boiling	Oj.

Macerate for six hours in a vessel lightly covered, and strain.

Edin. Ph. 1841.

℞	Any species of cinchona, according to prescription, in powder	℥j.
	Boiling water	Oj.

Infuse for four hours in a covered vessel, and then strain through linen or calico.

Dubl. Ph. 1826.

℞	Lance-leaved cinchona bark, reduced to coarse powder	℥j.
	Cold water, *by measure*	℥xij.

First rub the bark with a little of the water, then add the remainder of the water; macerate for twenty-four hours, occasionally stirring the ingredients, then pour off the clear liquor.

Med. use. Tonic. *Dose.* f℥j to f℥iij two or three times a day.

INFUSUM CINCHONÆ COMPOSITUM. *Compound infusion of Peruvian bark.*

U. S. Ph. 1840.

℞	Peruvian bark, in powder	℥j.
	Aromatic sulphuric acid	fʒj.
	Water	Oj.

Macerate for twelve hours, occasionally shaking, and strain.

INFUSUM CUSPARIÆ. *Infusion of cusparia.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Cusparia, bruised . . . ʒv.
Distilled water . . . Oj.

Macerate for two hours in a vessel lightly covered, and strain.

Dubl. Ph. 1826. *Infusum Angusturæ.*

℞ Angustura bark, bruised . ʒij.
Boiling water . . ℥viij.

Digest for two hours in a covered vessel, and strain.

Med. use. Tonic and stimulant. *Dose.* f℥iss to f℥ij.

INFUSUM DIGITALIS. *Infusion of foxglove.*

Lond. Ph. 1836.

℞ Fox-glove leaves, dried . ʒj.
Spirit of cinnamon, dried . f℥j.
Distilled water, boiling . Oj.

Macerate the fox-glove leaves in the water for two hours in a vessel lightly covered, and strain; then add the spirit.

Edin. Ph. 1841.

℞ Digitalis, dried . . ʒij.
Spirit of cinnamon . . f℥ij.
Boiling water . . f℥xviij.

Infuse the digitalis in the water in a covered vessel for four hours; strain through linen or calico; and then add the spirit of cinnamon.

Dubl. Ph. 1826.

℞ Leaves of foxglove, dried . . ʒj.
Spirit of cinnamon . . . ℥ss.
Boiling water . . . . ℥viij.

Digest for four hours in a closed vessel, and strain; then add the spirit.

There is an important difference in the strength of these infusions.

INFUSUM DIOSMÆ. *Infusion of buchu.* Lond. *Infusum buchu.* Edin. and Dubl.

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Buchu . . . ℥j.
Distilled water, boiling . Oj.

Macerate for four hours in a vessel lightly covered, and strain.

Dubl. Ph. 1826.

℞ Leaves of the diosma crenata ℥ss.
Boiling water . . ℥viij.

Digest for four hours, and then strain through linen.

Med. use. Tonic and diuretic. *Dose.* f℥j. to f℥ij.

INFUSUM GENTIANÆ COMPOSITUM. *Compound infusion of gentian.*

Lond. Ph. 1836.

℞ Gentian, sliced,
Orange-peel, dried, āā . ʒij.
Lemon-peel, fresh . . ʒiv.
Distilled water, boiling . Oj.

Macerate for an hour in a vessel lightly covered, and strain.

Edin. Ph. 1841. *Infusum gentianæ.*

℞ Gentian, sliced . . ℥ss.
Bitter orange-peel, dried and bruised . . . ʒj.
Coriander, bruised . . ʒj.
Proof spirit . . . f℥iv.
Cold water . . . f℥xvj.

Pour the spirit upon the solids; in three hours add the water, and in twelve hours more strain through linen or calico.

Dubl. Ph. 1826.

℞	Gentian root, sliced,	
	Orange-peel, dried, āā	ʒj.
	Lemon-peel, fresh	ʒj.
	Boiling water	f℥xij.

Digest for an hour in a covered vessel, and strain.

Med. use. An elegant tonic. *Dose.* f℥j to f℥ij.

INFUSUM ERGOTÆ. *Infusion of ergot of rye.*

℞	Bruised ergot of rye	ʒj.
	Boiling water	℥iv.

Macerate till cold. To be given in three doses. (Pereira.)

INFUSUM EUPATORII. *Infusion of thoroughwort.*

U. S. Ph. 1840.

℞	Thoroughwort, dried herb	℥j.
	Boiling water	Oj.

Macerate for two hours in a covered vessel, and strain.

Med. use. Tonic, in doses of f℥ij two or three times a day; emetic and diaphoretic in large tepid doses.

INFUSUM KRAMERIÆ. *Infusion of krameria, or rhatany.*

Lond. Ph. 1836.

℞	Rhatany	℥j.
	Boiling distilled water	Oj.

Macerate for four hours in a lightly covered vessel, and strain.

Med. use. Astringent; useful in chronic diarrhœa. *Dose.* f℥ss to f℥ij.

INFUSUM LINI COMPOSITUM. *Compound infusion of linseed.* Lond. and Dubl. *Infusum lini.* Edin.

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Linseed, bruised	ʒvj.
	Liquorice, sliced	ʒij.
	Distilled water, boiling	Oj.

Macerate for four hours, near the fire, in a vessel lightly covered, and strain.

Dubl. Ph. 1826.

℞	Linseed, bruised	℥j.
	Liquorice root, sliced	℥ss.
	Boiling water	℥xxxij.

Digest for four hours in a covered vessel, and strain.

Med. use. As a demulcent in catarrh, gonorrhœa, &c. *Dose.* ℥ij or ℥iij frequently repeated in the course of the day.

INFUSUM LUPULI. *Infusion of hop.*

Lond. Ph. 1836.

℞	Hops	ʒvj.
	Distilled water, boiling	Oj.

Macerate for four hours in a vessel lightly covered, and strain.

Med. use. Tonic, stomachic, and slightly narcotic. *Dose.* f℥j to f℥iss.

INFUSUM MENTHÆ SIMPLEX. *Simple infusion of mint.*

Dubl. Ph. 1826.

℞ Leaves of spearmint, dried . . ʒij.
Boiling water, a sufficient quantity to
afford six ounces of strained liquor.

Med. use. A stomachic.

INFUSUM MENTHÆ COMPOSITUM. *Compound infusion of mint.*

Dubl. Ph. 1826.

℞ Leaves of spearmint, dried . . ʒij.
Boiling water, a sufficient quantity to
afford six ounces after straining.

Digest for half an hour in a covered vessel, and when the liquor has grown cold, strain; then add,

Refined sugar . . . ʒij.
Oil of spearmint, three drops, dissolved
in compound tincture of cardamoms ℥ss. Mix.

Med use. A grateful stomachic; useful in allaying the irritability of the stomach, and as a vehicle for other medicines. *Dose.* One or two ounces occasionally.

INFUSUM PRUNI VIRGINIANÆ. *Infusion of wild cherry bark.*

U. S. Ph. 1840.

℞ Wild cherry bark, bruised . . ℥ss.
Water (cold) . . . . Oj.

Macerate for twenty-four hours, and strain.

Med. use. Tonic and soothing, in doses of f℥ij., three or four times a day.

INFUSUM PAREIRÆ. *Infusion of Pareira.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Pareira . . . . ʒvj.
Distilled water, boiling . . Oj.

Macerate for two hours in a vessel lightly covered, and strain.

Med. use. In irritable states of the bladder. *Dose.* f℥j to f℥ij.

INFUSUM QUASSIÆ. *Infusion of quassia.*

Lond. Ph. 1836.

℞ Quassia, sliced . . ℈ij.
Distilled water, boiling . Oj.

Macerate for two hours in a vessel lightly covered, and strain.

Edin. Ph. 1841.

℞ Quassia, in chips . . ʒj.
Boiling water . . Oj.

Infuse for two hours in a covered vessel, and then strain through linen or calico.

Dubl. Ph. 1826.

℞	Quassia wood, rasped	℈j.
	Boiling water	℥viij.

Digest for two hours in a closed vessel, and strain.

Med. use. Tonic. *Dose.* f℥j to ℥ij.

INFUSUM RHEI. *Infusion of rhubarb.*

Lond. Ph. 1836.

℞	Rhubarb, sliced	ʒiij.
	Distilled water, boiling	Oj.

Macerate for two hours in a vessel lightly covered, and strain.

Edin. Ph. 1841.

℞	Rhubarb, bruised into coarse powder	℥j.
	Spirit of cinnamon	f℥ij.
	Boiling water	f℥xviij.

Infuse the rhubarb for twelve hours in the water in a covered vessel; add the spirit, and strain through linen or calico.

Dubl. Ph. 1826.

℞	Root of rhubarb, sliced	ʒj.
	Boiling water	℥viij.

Digest for two hours in a covered vessel, and strain.

Med. use. As a mild purgative and stomachic. *Dose.* f℥j to f℥iij.

INFUSUM ROSÆ COMPOSITUM. *Compound infusion of rose.*

Lond. Ph. 1836.

℞	Red rose [petals], dried	ʒiij.
	Dilute sulphuric acid	fʒiss.
	Sugar	ʒvj.
	Distilled water, boiling	Oj.

Pour the water upon the rose petals in a glass vessel; then mix in the acid. Macerate for six hours, and strain the liquor; lastly, add the sugar to it.

Edin. Ph. 1841. *Infusum rosæ.*

℞	Rosa gallica, dried	ʒiij.
	Diluted sulphuric acid	fʒiss.
	Pure sugar	ʒvj.
	Boiling water	Oj.

Infuse the rose-petals in the water in a covered vessel of glass or porcelain, not glazed with lead, for one hour; then add the acid, strain through linen or calico, and dissolve the sugar in the liquor.

Dubl. Ph. 1826. *Infusum rosæ acidum.*

℞	Petals of the red rose, dried and deprived of their claws	℥ss.
	Dilute sulphuric acid, *by measure*	ʒiij.
	Boiling water	℥xlviij.

First pour the water on the petals in a glass vessel, then add the acid, and digest for half an hour; when the liquor has cooled, strain it, and add the sugar.

Med. use. Astringent and refrigerant. It is also used as an elegant vehicle for the exhibition of sulphate of magnesia. *Dose.* f℥j to ℥ij.

INFUSUM SCOPARII. *Infusion of broom.*

Lond. Ph. 1836.

℞	Broom	℥j.
	Boiling distilled water	Oj.

Macerate for two hours in a vessel lightly covered, and strain.

Med. use. Diuretic. *Dose.* f℥j. to f℥ij.

INFUSUM SARSAPARILLÆ COMPOSITUM. *Compound infusion of sarsaparilla.*

Dubl. Ph. 1826.

℞	Sarsaparilla root, previously cleansed with water, and sliced	℥j.
	Lime water	℥xvj.

Macerate for twelve hours in a closed vessel, shaking occasionally, and strain.

Med. use. The same as of the decoction. *Dose.* From ℥iv to ℥vj, two or three times a day.

INFUSUM SENEGÆ. *Infusion of senega.*

Edin. Ph. 1841.

℞	Senega	ʒx.
	Boiling water	Oj.

Infuse for four hours in a covered vessel, and strain.

Med. use. Tonic in typhoid pneumonia and bronchitis *Dose.* f℥j to f℥iss.

INFUSUM SENNÆ.

Edin. Ph. 1841.

℞	Senna	℥iss.
	Ginger, bruised	℈iv.
	Boiling water	Oj.

Infuse for an hour in a covered vessel; and then strain through linen or calico.

INFUSUM SENNÆ COMPOSITUM. *Compound infusion of senna.*

Lond. Ph. 1836.

℞	Senna	ʒxv.
	Ginger, sliced	℈iv.
	Distilled water, boiling	Oj.

Macerate for an hour in a vessel lightly covered, and strain.

Edin. Ph. 1841.

℞	Senna	ʒj.
	Tamarinds	℥j.
	Coriander, bruised	ʒj.
	Muscovado (sugar)	℥ss.
	Boiling water	f℥viij.

Infuse for four hours, with occasional stirring in a covered vessel, not glazed with lead, and then strain through linen or calico.

This infusion may be likewise made with twice or thrice the prescribed quantity of senna.

Dubl. Ph. 1826.

℞	Senna leaves	℥j.
	Ginger root, sliced	ʒj.
	Boiling water	℥xvj.

Digest for an hour in a covered vessel, and strain the liquor.

Med. use. A useful purgative, either alone or combined with neutral salts. *Dose.* f℥j to f℥ij.

INFUSUM SENNÆ CUM TAMARINDIS. *Infusion of senna with tamarinds.* Dubl. Ph. 1826. The same as the INFUSUM SENNÆ COMP. of the Edin. Ph., except that the Dubl. Ph. orders an entire ounce of raw sugar, instead of the half-ounce of Muscovado ordered in the Edin. Ph.

INFUSUM SERPENTARIÆ. *Infusion of serpentaria.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Serpentaria	℥ss.
	Boiling water	Oj.

Macerate for four hours in a covered vessel, and then strain.

Med. use. A stimulating tonic. *Dose.* f℥ss. to f℥ij.

INFUSUM SIMARUBÆ. *Infusion of simaruba.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Simaruba, bruised	ʒiij.
	Distilled water, boiling	Oj.

Macerate for two hours in a vessel lightly covered, and strain.

Dubl. Ph. 1826.

℞	Bark of simaruba, bruised	ʒss.
	Boiling water	℥viij.

Digest for two hours in a covered vessel, and strain.

Med. use. Astringent; has been used in diarrhœa and dysentery. *Dose.* f℥j to f℥ij.

INFUSUM SPIGELIÆ. *Infusion of pink root.*

U. S. Ph. 1840.

℞	Pink root	℥ss.
	Boiling water	Oj.

Macerate for two hours in a covered vessel, and strain.

INFUSUM TABACI. *Infusion of tobacco.*

Dubl. Ph. 1826.

℞	Tobacco leaves	ʒj.
	Boiling water	℥xvj.

Macerate for an hour in a lightly covered vessel, and strain.

Med. use. Chiefly in the form of enema, in ileus, incarce-

INFUSUM VALERIANÆ. *Infusion of valerian.*

Lond. Ph. 1836.

℞ Valerian	℥ss.
Distilled water, boiling	Oj.

Macerate for half an hour in a vessel lightly covered, and strain.

Dubl. Ph. 1826.

℞ Root of wild valerian, reduced to a coarse powder	ʒij.
Boiling water, *by measure*	℥vij.

Digest for an hour, and strain the liquor when cold.

Med. use. As a nervine in hysteria. *Dose.* f℥j to f℥ij.

INJECTIO. (From *injicio*, to throw in.) *Injection.*

Liquids intended to be thrown, by means of a syringe, into some of the vessels or cavities of the body.

INK.

A composition or pigment for writing or printing on paper, parchment, linen, or other material.

Black writing ink.

1.

℞ Bruised nutgalls	lbij.
Common copperas	lbv.
Gum arabic	lbiv.
Water	cong. xij.
Creasote	ʒij.

Boil the nutgalls in three-fourths of the water for one hour, then strain. Dissolve the gum in twice its weight of hot water, and add it to the decoction. Dissolve the copperas in the remainder of the water, mix the liquors together, and make up the quantity to 12 gallons. Finally, stir in the creasote.

2.

℞ Bruised nutgalls	12 parts,
Copperas, slightly calcined,	4 parts,
Gum arabic	4 parts,
Water	120 parts.

Mix together in a stone bottle, and let them stand for two or three weeks, shaking the bottle from time to time. Then pour off the clear liquor, and add a little creasote to prevent mouldiness.

Logwood and other astringent substances are sometimes substituted for nutgalls, but without any advantage resulting.

Blue writing ink.

℞ Sulphate of iron	℥iv.
Sulphuric acid	f℥ijss.
Nitric acid	f℥vj. or q. s.
Ferrocyanide of potassium	℥ivss.
Oxalic acid	ʒvj.
Water	q. s.

Dissolve the sulphate of iron in Oj of water, add the sulphuric acid, and heat the solution to boiling; then pour in the nitric acid in small quantities at a time, continuing the boiling, until the iron is peroxidized. Dissolve the ferrocyanide of potassium in Oj of water, and add this solution to the former. Collect the precipitate that will be formed on a filter, and wash it with no more water than will be necessary.

Triturate the precipitate thus obtained with the oxalic acid, adding gradually Oj of water, or as much as will make the solution of the required colour and thickness. The common commercial Prussian blue does not answer for making this ink.

Copying ink.

1.

℞ Gum arabic	240 grs.
Spanish liquorice	20 grs.
Water	720 grs.

Dissolve, with the application of a little heat. Then rub ʒj of lamp-black with ʒj of sherry wine, and add to it the above solution.

2.

Add ℥j of treacle to a pint of common black ink.

Writing made with this ink may be transferred by means of a copying machine.

Gold ink.

This is made by mixing finely-divided gold leaf, or Dutch metal, with thin gum-water. The writing, when dry, may be burnished.

Green ink. (Klaproth's.)

Boil together a mixture of two parts of verdigris, 1 part of cream of tartar, and 8 parts of water, until reduced to one-half; then strain through cloth, and bottle the solution for use.

Horticultural ink. Ink for writing on zinc labels for gardens.

1.

℞ Chloride of platinum	grs. v.
Distilled water	f℥j.

Dissolve.

2.

℞ Chloride of manganese	ʒss.
Distilled water	f℥j.

Dissolve.

Writing made with either of these solutions, on zinc, almost immediately turns black, and cannot be removed by washing.

Incorrodible ink. For labelling bottles containing strong acids or alkalis.

1.

℞ Powdered copal	25 grs.
Oil of lavender	200 grs.

Dissolve with a gentle heat and colour with lamp-black, indigo, or vermilion.

2.

℞ Asphaltum	1 part,
Oil of turpentine	2 parts.

Dissolve with heat.

Indian ink.

This is generally considered to be fine lamp-black mixed with a solution of gelatine and dried. It has been recommended that the lamp-black should be previously purified by treating it with solution of potash; and that the gelatinizing power of the gelatine should be partly destroyed by long continued boiling. It is generally scented with musk or ambergris and a little camphor.

Marking ink, for marking linen, &c., *with preparation.*

(*The ink.*)

℞	Nitrate of silver	ʒj. ℈ij.
	Gum arabic, powdered	ʒij.
	Sap green	℈j.
	Distilled water	℥j.

Dissolve.

(*The preparation or mordant.*)

℞	Carbonate of soda	℥ij.
	Distilled water	Oj.

Dissolve.

Marking ink, for marking linen, &c., *without preparation.*

℞	Nitrate of silver,	
	Bitartrate of potash, āā	℥j.
	Solution of ammonia	℥iv.
	Archill	℥ss.
	Honey	ʒiij.
	Compound tragacanth powder	ʒiss.

Rub the nitrate of silver and bitartrate of potash together, then add the ammonia, the archill, and the other ingredients.

It may be further thickened by the addition of more of the compound tragacanth powder, when required to be used with a stencil.

Linen, &c., marked with this ink, will require to have a hot iron passed over it, or the part marked must be held to the fire until the marks have assumed a jet black colour.

Printing ink.

1.

Put linseed oil into an iron pot capable of holding two or three times the quantity introduced; heat it over a fire until a dense vapour arises from it; then, having removed the pot from the fire, apply a light, attached to the end of a stick, to the surface of the oil, when the vapour will inflame; allow it to burn until, on taking out a small quantity of the oil, it is found to be thick and tenacious; the flame is then to be extinguished by putting a cover over the pot. To 6 quarts of oil thus prepared, add gradually 6 pounds of black rosin, and dissolve it by the aid of heat, then add, in small quantities at a time, 1¾ pound of dry yellow soap, cut into slices, and effect the combination by stirring and the application of heat. This is the *varnish* of which the ink is to be made, and on the careful preparation of which the quality of the ink much depends. This is to be mixed with 2½ ounces of ground indigo, the same quantity of ground Prussian blue, 4 pounds of mineral lamp-black, and 3½ pounds of the best vegetable lamp-black, and the whole ground together into a perfectly smooth and uniform paste.

2.

The following is a good formula for the extemporaneous preparation of printing ink.

℞	Balsam of copaiba	℥ix.
	Lamp-black	℥iij.
	Indigo and Prussian blue, āā	ʒv.
	Indian red	ʒvj.
	Dry yellow soap	℥iij.

To be ground together on a slab, with a muller, until perfectly smooth.

Printing inks of different colours are made by mixing the *varnish* described in formula No. 1 with various pigments, such as vermilion, red lead, Indian red, chrome yellow, chrome red, verdigris, Prussian blue, &c.

Red ink.

1.

℞ Brazil wood . . . ℥iv.
Alum . . . . ℥ij.
Distilled water . . Oij.

Boil for a quarter of an hour and strain, then add

Gum arabic . . . ℥j.

Mix, and bottle it for use.

2.

℞ Garancine . . . ℥j.
Solution of ammonia . ℥j.
Distilled water . . Oj.
Gum arabic . . ℥ss.

Rub the garancine with the ammonia and water in a mortar, and filter it, and dissolve the gum in the solution.

Silver ink.

Made by mixing silver powder with thin gum-water.

Sympathetic ink.

Under this name solutions are used for writing on paper, which writing is not legible until acted on by some chemical agent. Solution of nitrate or chloride of cobalt forms the best sympathetic ink; the writing is developed on holding the paper to the fire. Solution of chloride of copper acts in a similar manner. Writing made with solution of sulphate of iron is developed on washing it over with solution of prussiate of potash or decoction of nutgalls; and many other solutions of a similar description may be made.

Yellow ink.

℞ French berries . . . . ℥iv.
Alum . . . . . ℥ij.
Distilled water . . . . Oij.

Boil for a quarter of an hour and strain, then add

Gum arabic . . . . ℥j.

Mix, and bottle it for use.

IODINIUM. *Iodine.* (From ἰώδης, violet-coloured.) *Symb.* I. *equiv.* 126.

This substance is obtained from the dark-coloured mother-liquors which remain after separating the more readily crystallizable salts from the lixivium of kelp. These liquors are concentrated by evaporation, and then sulphuric acid and oxide of manganese being added, in a leaden retort, and heat applied, the iodine distils over and is condensed in glass receivers.

ARSENICI IODIDUM. *Iodide of arsenic.*

Magendie.

1.

℞	Metallic arsenic	16 parts,
	Iodine	100 parts.

Mix, and sublime in a glass alembic.

It will be in the form of orange-coloured needles.

2.

℞	Metallic arsenic	30 parts,
	Iodine	100 parts,
	Water	1000 parts.

Boil them together in a glass flask, until the colour of the iodine has disappeared, then filter the solution, and evaporate to dryness by the heat of a water bath.

The residue may be sublimed.

LIQUOR ARSENICI PERIODIDI. *Solution of periodide of arsenic.*

Wackenroder.

℞	Metallic arsenic	grj.
	Iodine	grvj.
	Distilled water	ʒvj.

Digest at a gentle heat until dissolved; then filter the solution and evaporate it to dryness, by the heat of a water bath. Dissolve the salt in f℥vj of distilled water.

SULPHURIS IODIDUM. *Iodide of sulphur.*

℞	Sulphur	1 part,
	Iodine	4 parts.

Mix together in a Wedgwood's mortar, and introduce the mixture into a wide-mouth flask; apply a *very gentle* heat (not sufficient to fuse the mixture) to the flask; after a little while the combination of the ingredients will be indicated by their assuming a darker colour, and when this has extended throughout the mixture, more heat must be applied, so as to fuse the mass. The flask is now to be allowed to cool, then broken, and the salt put into stoppered bottles.

Only a small quantity of ingredients should be operated upon at a time, and great care must be taken not to apply the heat too rapidly, as violent action, accompanied by a kind of explosion, may otherwise occur.

UNGUENTUM SULPHURIS IODIDI. *Ointment of iodide of sulphur.*

℞	Iodide of sulphur	1 part,
	Lard	16 parts. Mix.

These preparations have been recommended by M. Biett in some cutaneous affections.

IODOFORMUM. *Iodoform.*

℞	Distilled water	℥xij.
	Rectified spirit	℥ij.
	Iodine	℥j.
	Bicarbonate of soda	℥j.

Put the ingredients into a flask and apply the heat of a water-bath. The liquor will at first assume a dark brown colour, the vapour of acetic ether, with a little iodine and water, will be disengaged, and, after continuing the heat for some time, the colour will disappear, and the iodoform, in bright yellow scales, will be deposited. The flask is now to be removed from the bath, and the iodoform collected on a filter and washed with a small quantity of cold water. More iodine may be added to the remaining solution as long as it becomes decolourised by a repetition of the process.

IRIDIUM. (From *iris*, the rainbow, in consequence of the different colours assumed by its compounds.) *Symb.* Ir. *equiv.* 98.

One of the metals which accompanies platinum. It is said to be the heaviest of the metals, having a sp. gr. 23 to 26. It is also the most infusible, and the hardest metal, and is said not to be acted on by any acid.

ISSUE PEAS. *Pisæ pro fonticulis.*

Small globular bodies used for keeping open issues. Those most frequently used are made from *orange berries*, the immature fruit of the orange tree, which are turned in a lathe. They are sometimes made in a similar way from orris root. The following compositions are also used when more active applications are required.

1.

℞ Bees wax	lbj.
Turmeric powder . .	℥viij.
Orris root, powdered . .	℥iv.
Venice turpentine . .	q. s.

Mix into a stiff mass with heat, and form into peas.

2.

℞ Bees wax	℥vj.
Verdigris,	
Hellebore powder, āā .	℥ij.
Powdered orris root . .	℥iss.
Venice turpentine . .	q. s.

Mix into a stiff mass with heat, and form into pills.

ISSUE PLASTER. *Sparadrapum pro fonticulis.*

1.

℞ Lead plaster . . .	lbj.
Burgundy pitch . .	℥ij.
Powdered orris root . .	℥j.

Mix with heat, spread it on linen or paper, and cut it in small squares.

2.

℞ Lead plaster . . .	lbj.
Burgundy pitch,	
Chio turpentine,	
Bees wax	℥ij.

Mix with heat, and spread on linen or paper.

JALAPINA. *Jalapine.*

This name has been, with doubtful propriety, applied to one of the resins obtained from jalap.

1.

Dissolve common resin of jalap in rectified spirit, and add to it an alcoholic solution of acetate of lead as long as a precipitate is formed; separate the precipitate by filtration, add a few drops of diluted sulphuric acid to remove any lead which might have been added in excess, and if a precipitate be formed, again filter the mixture. Mix the clear solution with four or five times its volume of distilled water, collect the precipitated resin, and dry it over a water-bath.

Purified and decolourised resin of jalap is frequently used for *jalapine.* It may be made in the following manner:—

2.

Boil powdered jalap in water as long as any thing is dissolved. Dry and pulverize the insoluble residue, and treat this with rectified spirit. Decolourise the spirituous solution with animal charcoal, and mix it with water to precipitate the resin.

JULEPUS. *Julep.*

A term synonymous with *mixture.*

MINT JULEP.

A favorite beverage in some parts of America.

Half fill a tumbler with pounded ice; add a small wine glassful of brandy, a like quantity of rum, and a few lumps of sugar; put in a sprig of fresh mint, and stir them well together. The liquor, which is formed as the ice melts, is to be drank by sucking it through a straw.

KATCHUP. *Ketchup. Catsup.* A kind of sauce.

Mushroom katchup.

1.

Sprinkle full-grown mushrooms with salt, stir them frequently for two days, squeeze them with a spoon, and collect the juice. To each pint of juice add ℥ss of whole pepper; put them into a stone jar, and immerse the jar in boiling water for two hours; strain it, and add ℥ss of brandy to each pint.

Should any mouldiness appear, it should be heated again in boiling water, with a little more pepper.

2.

℞	Mushroom juice	cong. vii.
	Pimento	℥viij.
	Black pepper,	
	Cloves,	
	Ginger, āā	℥iv.
	Shallots	℥xij.
	Long pepper	℥ij.
	Salt	lbiv.

Boil them together for an hour, then strain, and put it into bottles.

Walnut katchup.

℞	Juice of young walnuts	cong. j.
	Anchovies	lbij.
	Shallots	lbj.
	Cloves, Mace, Black pepper, āā	℥j.

Simmer together for twenty minutes, then strain, and bottle.

KELP.

The crude soda ash, obtained by burning various species of fucus.

KIRCHWASSER.

A spirituous liquor made in Germany from bruised cherries.

KOALIN.

China clay; a fine pure clay, prepared by levigation from mouldering granite, and employed in the manufacture of porcelain.

KERMES MINERAL. *Sub-hydrosulphate of antimony.*

Codex, 1837.

℞ Crystallized carbonate of soda	128 parts.
Water	1280 „
Sulphuret of antimony	6 „

Dissolve the carbonate of soda in the water with the aid of heat in a clean cast-iron pan; add the sulphuret of antimony reduced to a fine powder, and boil the mixture for about an hour, constantly stirring it; filter the boiling solution into a pan previously heated, and containing a small quantity of very hot water.

Allow the solution to cool as slowly as possible; then collect the powder which will have deposited, and wash it on a filter with cold water; subject the powder thus washed to pressure, and dry it in a stove moderately heated.

KERMES IGNE PARATUM. *Kermes mineral, prepared with fire.*

Codex, 1837.

℞ Sulphuret of antimony	50 parts.
Carbonate of potash	100 „
Sulphur sublimed and washed	3 „

Mix these substances carefully, and fuse the mixture in a Hessian crucible. When the mass shall be fully fused, convey it into an iron mortar; allow it to cool, and reduce it to a fine powder. Then boil this powder in an iron vessel with

Water	1000 parts.

Filter the boiling liquor, and allow it to cool slowly; decant the solution; put the kermes on a filter, wash it carefully, and dry it as already mentioned.

LACCA. *Lac.*

A resinous substance, deposited by an insect on the branches of Ficus indica, Croton lacciferum, and some other trees, (see page 181.) It is met with in commerce in several forms:—

Stick-lac. Lacca in ramulis. Consists of the twigs encrusted with the lac as deposited by the insects.

Seed-lac. Lacca in granis. Is the resinous concretion which has been separated from the twigs, broken down in a mortar, triturated with water by which much of the colouring matter is extracted, and then dried. It is in small grains.

Shell-lac. Lacca in tabulis. Is the seed-lac melted, strained, and run into thin layers, or scales. It differs in colour according to the quantity of colouring matter which it retains; the lightest coloured is called *Orange-lac.* Darker varieties are distinguished as *Liver-coloured, Ruby, Garnet,* &c.

Lump-lac. Lacca in massis. Seed-lac melted and run into cakes.

White lac. Lacca alba. Lac deprived of colour, by boiling it in caustic solution of potash, then passing chlorine gas through the solution, and finally pulling and washing it in hot water. It is generally made into twisted sticks, and is used for making the delicate coloured sealing-wax and colourless varnish.

LAC DYE.

Supposed to be the colouring matter of the crude lac extracted by triturating the stick-lac with water, and evaporating the solution.

LAC LAKE.

This is said to be obtained by boiling the seed-lac in a solution of carbonate of soda, and precipitating the colouring matter with alum. It produces a colour similar to that of cochineal.

SOLUTION OF LAC, AQUEOUS.

℞	Shellac	℥v.
	Borax	℥j.
	Water	Oj.

Boil them together.

This may be used as a varnish, or as a vehicle for colours. Mixed with lamp-black, it has been used as an ink that will resist acids.

LAC ROSÆ. *Milk of roses.*

℞	Blanched almonds . . .	℥viij.
	Rose water	Oiij.
	White soft soap, or Windsor soap,	
	White wax,	
	Oil of almonds, āā . . .	℥ss.
	Rectified spirit . . .	℥xij.
	Oil of bergamot . . .	℥ss.
	„ Lavender . . .	ʒj.
	Otto of roses	ʒss.

Beat the almonds with the rose water, so as to form an emulsion. Mix the soap, white wax, and oil together, with the aid of a gentle heat, and then rub this mixture in a mortar with the emulsion, and carefully strain it. Dissolve the essential oils in the spirit, and mix this with the strained emulsion.

LAPIS DIVINUS. *Pierre divine.*

Codex.

℞	Sulphate of copper,	
	Nitrate of potash,	
	Alum, āā	ʒiij.
	Camphor	ʒj.

Mix the three salts in powder, and heat them in a crucible until they undergo aqueous fusion; then add the camphor in fine powder, and pour the mixture on to an oiled slab. When cold, break it into pieces and keep it in a stoppered bottle.

Med. use. One part dissolved in 259 parts of water, and the solution filtered, is used as a collyrium.

LAPIS HIBERNICUS. *Hardesia. Ardesia Hibernicæ. Tegula Hibernica. Irish slate.*

An argillaceous slate, said to contain iron and sulphur. It is found in different parts of Ireland, in masses of a bluish-black colour, which stain the hands. When powdered, it has a light bluish tint, which becomes darker with keeping. When exposed to the fire it acquires a pale red colour, and emits a sulphurous smell. The powdered slate is sometimes administered by the poor as a remedy for internal bruises.

LAPIS MEDICAMENTOSUS. *Medicinal stone.*

Lond. Ph. 1746.

℞	Alum, Litharge, Armenian bole, āā .	lbss.
	Colcothar of green vitriol . .	℥iij.
	Vinegar	f℥iv.

Mix, and dry them until they become hard.

Med. use. This was formerly much used externally, as an astringent, for fastening loose teeth, preserving the gums, healing and drying up ulcers and wounds, &c. It has also been used in injections for gonorrhœa.

LIMONADUM. *Lemonade. Lemon sherbet. King's cup.*

1.

Infuse two lemons, sliced, in a pint of boiling water, for an hour, then strain and sweeten it with sugar.

2.

℞	Tartaric acid	ʒij.
	Water	Oij.
	Sugar	℥vj.
	Essence of lemon . . .	q. s. Mix.

LIMONADUM AERATUM. *Aërated lemonade.*

About f℥j of syrup of lemons added to a bottle of aërated water.

LINCTUS. (From *lingo*, to lick.) *Lohoch. Illinctus.*

Terms used to designate medicines of the consistence of soft honey, which are licked off a spoon.

LINCTUS PECTORALIS. *Cough linctus.*

Dr. Latham.

℞	Confection of dog-rose,	
	Simple oxymel, āā . . .	℥j.
	Compound tragacanth powder .	ʒij.
	Compound ipecacuanha powder .	ʒss.
	Syrup of tolu	℥ij. Mix

A tea-spoonful to be taken three or four times a day.

LINIMENTUM ÆRUGINIS. *Liniment of verdigris.*

Lond. Ph. 1836.

℞ Verdigris, powdered . . . ℥j.
Vinegar . . . . f℥vij.
Honey, despumated . . . ℥xiv.

Dissolve the verdigris in the vinegar, and strain through a linen cloth; afterwards, the honey being poured in, boil down to a proper consistence

Dubl. Ph. 1826. *Oxymel cupri subacetatis.*

℞ Prepared verdigris . . . ℥j.
Distilled vinegar, *by measure* . . ℥vij.
Clarified honey, *by weight* . . ℥xiv.

Dissolve the verdigris in the vinegar and filter through linen; add the honey, and boil it down to a proper thickness.

Med. use. Detergent and escharotic.

LINIMENTUM AMMONIÆ. *Liniment of ammonia.*

Lond. Ph. 1836.

℞ Solution of ammonia . . f℥j.
Olive oil . . . . f℥ij.

Shake them together till they are mixed.

Edin. Ph. 1841.

℞ Olive oil . . . f℥ij.
Aqua ammoniæ, (D. 960) . f℥j.

Mix, and agitate them well together.

Dubl. Ph. 1826.

℞ Water of caustic ammonia, *by measure* ʒij.
Olive oil, *by measure* . . . ℥ij.

Mix, by shaking them together.

Med. use. Rubefacient, and usefully applied around the throat in cynanche tonsillaris, spread on a piece of flannel.

LINIMENTUM AMMONIÆ SESQUICARBONATIS. *Liniment of sesquicarbonate of ammonia.*

Lond. Ph. 1836.

℞ Solution of sesquicarbonate of ammonia f℥j.
Olive oil . . . . f℥iij.

Shake them together till they are mixed.

LINIMENTUM AMMONIÆ COMPOSITUM. *Compound liniment of ammonia.*

Edin. Ph. 1841.

℞ Stronger aqua ammoniæ (D. 880) . f℥v.
Tincture of camphor . . . f℥ij.
Spirit of rosemary . . . f℥j.

Mix them well together. This liniment may be also made weaker for some purposes with three fluidounces of tincture of camphor and two of spirit of rosemary.

Dr. Granville's ammoniated counter-irritants, contain the same ingredients as the preceding liniment. They are as follows:—

Milder ammoniated liniment.

℞	Solution of ammonia (sp. gr. 872) .	ʒiv.
	Spirit of rosemary . . .	ʒiij.
	Spirit of camphor (℥j. to Oj. spirit) .	ʒj. Mix.

Stronger ammoniated liniment.

℞	Solution of ammonia (sp. gr. 872) .	ʒv.
	Spirit of rosemary . .	ʒij.
	Spirit of camphor (as before) . .	ʒj. Mix.'

LINIMENTUM CANTHARIDIS. *Liniment of cantharides.*

U. S. Ph. 1840.

℞	Cantharides, in powder . .	℥j.
	Oil of turpentine . . .	Oss.

Digest for three hours in the heat of a water bath, and strain.

LINIMENTUM CALCIS. *Liniment of lime.*

Edin. Ph. 1841.

℞ Linseed oil, and
Lime water, āā equal measures.
Mix, and agitate them well together.

Dubl. Ph. 1826.

℞	Lime water,	
	Olive oil, āā, *by measure* .	℥iij.

Mix them by agitation.

Med. use. A valuable application to scalds and burns.

LINIMENTUM CAMPHORÆ. *Liniment of camphor.*

Lond. Ph. 1836.

℞	Camphor . . .	℥j.
	Olive oil . . .	f℥iv.

Dissolve the camphor in the oil.

Edin. Ph. 1841.

℞	Olive oil . . .	f℥iv.
	Camphor . . .	℥j.

Rub them together in a mortar till the camphor is dissolved.

Med. use. As an embrocation to sprains and bruises, and in rheumatism also.

LINIMENTUM CAMPHORÆ COMPOSITUM. *Compound camphor liniment.*

Lond. Ph. 1836.

℞	Camphor . .	℥iiss.
	Solution of ammonia .	f℥viiss.
	Spirit of lavender .	Oj.

Mix the solution of ammonia with the spirit; then let a pint distil from the glass retort with a slow fire; lastly, in this dissolve the camphor.

Dubl. Ph. 1826.

℞	Camphor . . .	℥ij.
	Water of caustic ammonia, *by measure* . .	℥vj.
	Spirit of lavender . .	Oj.

Mix the water of ammonia with the spirit, then distil a pint from a glass retort, with a slow fire; lastly, in this dissolve the camphor.

Med. use. Used for the same purposes as the simple liniment; but it is much stronger.

Linimentum hydrargyri compositum. *Compound liniment of mercury.*

Lond. Ph. 1836.

℞	Stronger ointment of mercury,	
	Lard, āā	℥iv.
	Camphor	℥j.
	Rectified spirit	fʒj.
	Solution of ammonia	f℥iv.

Rub the camphor, first with the spirit, then with the lard and ointment of mercury; lastly, the solution of ammonia being gradually poured in, mix them all.

Med. use. Stimulant and discutient. One drachm, containing nearly ten grains of mercury, may be rubbed into the affected part night and morning.

Linimentum ioduretum gelatinosum. *Gelée pour le goitre.*

Beesley.

℞	White soap	ʒvj. or ʒvij.
	Proof spirit	f℥ij.

Dissolve with a gentle heat, and add while still warm,

Iodide of potassium	ʒiv., dissolved in
Proof spirit	f℥ij.

Mix, and keep in wide-mouth stoppered bottles.

Linimentum olei crotonis. *Croton oil liniment.*

Soubeiran's Ph. 1840.

℞	Croton oil	1 part.
	Olive oil	5 parts. Mix.

By rubbing the skin several times a day with the mixture, it becomes red, and is then covered with a pustular exantheme, which, in the course of some days, allows a yellowish fluid to ooze out; the skin then returns to the natural state. It is accordingly used with advantage as a revulsive.

Linimentum opii. *Liniment of opium.*

Lond. Ph. 1836.

℞	Liniment of soap	f℥vj.
	Tincture of opium	f℥ij. Mix.

Edin. Ph. 1841.

℞.	Castile soap	℥vj.
	Opium	℥iss.
	Camphor	℥iij.
	Oil of rosemary	fʒvj.
	Rectified spirit	Oij.

Macerate the soap and opium in the spirit for three days; filter; add the oil and camphor, and agitate briskly.

LINIMENTUM SAPONIS CUM OPIO. *Liniment of soap with opium, or Anodyne liniment.*

Dubl. Ph. 1826.

℞	Soap liniment, *by measure*	4 parts.
	Tincture of opium	3 ,, Mix.

Med. use. A useful sedative liniment.

LINIMENTUM SAPONIS. *Liniment of soap.*

Lond. Ph. 1836.

℞	Soap	℥iij.
	Camphor	℥j.
	Spirit of rosemary	f℥xvj.

Dissolve the camphor in the spirit; afterwards add the soap, and macerate with a gentle heat until it is dissolved.

Edin. Ph. 1841.

℞	Castile soap	℥v.
	Camphor	℥iiss.
	Volatile oil of rosemary	f℥xvj.
	Rectified spirit	Oij.

Digest the soap in the spirit for three days; add the camphor and oil, and agitate briskly.

Dub. Ph. 1826.

℞	Soap	℥iij.
	Camphor	℥j.
	Spirit of rosemary	Oj.

Digest the soap in the spirit of rosemary until it is dissolved, then add the camphor.

Med. use. Stimulant and anodyne, and may be advantageously applied against local pains, and in bruises, rubbed upon the parts.

LINIMENTUM SIMPLEX. *Simple liniment.*

Edin. Ph. 1841.

℞	Olive oil	4 parts.
	White wax	1 part.

Dissolve the wax in the oil with a gentle heat; and agitate well as the fused mass cools and concretes.

LINIMENTUM SINAPIS. *Liniment of mustard.*

℞	Bruised mustard seed	lbss.
	Oil of turpentine	lbj.

Digest, with a gentle heat, for a week, then strain.

This is intended as an imitation of Whitehead's essence of mustard.

LINIMENTUM TEREBINTHINÆ. *Liniment of turpentine.*

Lond. Ph. 1836.

R	Soft soap	℥ij.
	Camphor	℥j.
	Oil of turpentine	f℥xvj.

Shake them together till they are mixed.

Dubl. Ph. 1826.

℞	Ointment of white resin	lbj.
	Oil of turpentine	lbss.

Having melted the ointment, gradually mix the oil of turpentine with it.

LINIMENTUM TEREBINTHINATUM.

Edin. Ph. 1841.

℞ Resinous ointment	℥iv.
Oil of turpentine	f℥v.
Camphor	℥ss.

Melt the ointment, and gradually mix with it the camphor and oil, till a uniform liniment be obtained.

Med. use. A valuable application to recent burns. It may also be advantageously rubbed on parts affected with rheumatism.

LINTEUM. *Lint.*

A soft woolly substance, made by scraping old linen cloth. It is employed in dressing wounds and ulcers.

LIQUOR ÆTHEREUS OLEOSUS. *Oily ethereal liquor.*

Dubl. Ph. 1826.

℞ What remains in the retort after the distillation of sulphuric ether.
Distil down to one-half with a gentle heat.

LIQUOR ALUMINIS COMPOSITUS. *Compound solution of alum.*

Lond. Ph. 1836.

℞ Alum,	
Sulphate of zinc, āā	℥j.
Boiling water	Oiij.

Dissolve the alum and sulphate of zinc together in the water, and strain.

Med. use. A powerful astringent; applied to old ulcers, and used as a collyrium and an injection.

LIQUOR AMMONIÆ SESQUICARBONATIS. *Solution of sesquicarbonate of ammonia.*

Lond. Ph. 1836.

℞ Sesquicarbonate of ammonia	℥iv.
Distilled water	Oj.

Dissolve the sesquicarbonate of ammonia in the water, and strain.

Edin. Ph. 1841. *Aqua ammoniæ carbonatis.*

℞ Carbonate of ammonia	℥iv.
Distilled water	Oj.

Dissolve the salt in the water.

LIQUOR ARGENTI NITRATIS. *Solution of nitrate of silver.*

Lond. Ph. 1836.

℞ Nitrate of silver	ʒj.
Distilled water	f℥j.

Dissolve the nitrate of silver in the water, and strain; then, the access of light being prevented, keep it in a well closed vessel.

Edin. Ph. 1841. *Solutio argenti nitratis.*

℞ Nitrate of silver	40 grs.
Distilled water	1600 grs.

Dissolve the salt in the water, and keep the solution in well closed vessels.

LIQUOR AMMONIÆ ARSENIATIS. *Solution of arseniate of ammonia.*

Biett.

1.

Dissolve *arsenic acid* in water, and neutralize it with solution of ammonia; then evaporate the solution, and allow the salt to crystallize. Dissolve 1 grain of the salt in f℥j. of distilled water.

2.

Dissolve powdered *arsenious acid* in hot hydrochloric acid, then add nitric acid, in small quantities at a time, as long as red vapours are given off, and evaporate the solution to dryness; the residue will consist of *arsenic acid*, with which proceed according to the previous formula.

Dose. From 20 to 25 drops to be given daily, increasing the dose until it reaches a drachm or more.

LIQUOR BARII CHLORIDI. *Solution of chloride of barium.* Lond. *Solutio barytæ muriatis.* Edin.

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Chloride of barium	ʒj.
Distilled water	f℥j.

Dissolve the chloride of barium, and strain.

Dubl. Ph. 1826. *Barytæ muriatis aqua.*

℞ Muriate of baryta	1 part,
Distilled water	3 parts.

Dissolve.

LIQUOR CALCIS. *Lime water.* Lond. *Aqua calcis.* Edin. and Dubl.

℞ Lime	lbss.
Distilled water	Oxij.

Upon the lime, first slaked with a little of the water, pour the remaining water, and shake them together: then immediately cover the vessel, and set it by for three hours; afterwards keep the solution with the remaining lime in stopped glass vessels, and when it is to be used take from the clear solution.

LIQUOR CALUMBÆ. *Concentrated infusion of Calumba.*

Treat ℥v of powdered calumba root, in a displacement apparatus, with cold distilled water, until entirely exhausted. Heat the liquor to the boiling point, and then filter it. Bring the filtered liquor to f℥xviij, either by evaporation over a water bath, or by dilution with more water, and add f℥ij of rectified spirit.

f℥j of this mixed with f℥vij of water forms a liquor somewhat similar to the *infusum calumbæ*, for which it is sometimes substituted.

LIQUOR AURANTII COMPOSITUM. *Concentrated compound infusion of orange peel*, and

LIQUOR GENTIANÆ COMPOSITUM. *Concentrated compound infusion of gentian.*

These may be made by a process similar to that for the liquor calumbæ, using the ingredients ordered for *infusum aurantii compositum*, and *infusum* *gentianæ compositum*, and making the liquors eight times the strength of the infusions.

LIQUOR CINCHONÆ.

Battley.

Macerate coarsely-powdered yellow bark with twice its weight of cold distilled water, for four or six hours, and press. Repeat this two or three times; mix the liquors together; filter them; evaporate the clear liquor until the sp. gr. of it shall be 1.2; then let it stand for some hours; decant off the clear part, and add sufficient proof spirit to reduce the sp. gr. to 1.1.

LIQUOR FERRI ALKALINI. *Alkaline solution of iron.*

Lond. Ph. 1824.

℞	Iron	℥iiss.
	Nitric acid	f℥ij.
	Distilled water	f℥vj.
	Solution of subcarbonate of potash	f℥vj.

Pour the acid and water, previously mixed, upon the iron; then, when bubbles have ceased to escape, pour off the acid liquor; add this gradually and at intervals to the solution of subcarbonate of potash, occasionally stirring, until, it having assumed a brown-red colour, effervescence is no longer excited. Lastly, set it aside for six hours, and pour off the solution.

This was intended as an imitation of *Stahl's tinctura martis alkalina.* It is a bad preparation, subject to decomposition.

LIQUOR FERRI IODIDI. *Solution of iodide of iron.*

U. S. Ph. 1840.

℞	Iodine	℥ij.
	Iron filings	℥j.
	Prepared (clarified) honey	f℥v.
	Distilled water, a sufficient quantity.	

Mix the iodine with ten fluidounces of the distilled water, in a porcelain or glass vessel, and gradually add the iron filings, stirring constantly. Heat the mixture gently, until the liquor acquires a light-greenish colour; then having added the honey, continue the heat a short time and filter. Lastly, pour the distilled water upon a filter and allow it to pass until the whole of the filtered liquor measures twenty fluidounces. Keep the solution in closely stopped bottles.

LIQUOR HYDRIODATIS ARSENICI ET HYDRARGYRI. *Solution of hydriodate of arsenic and mercury.*

Donovan.

Triturate 6.08 grains of finely-levigated metallic arsenic, 15.38 grains of mercury, and 50 grains of iodine, with fʒj of alcohol, until the mass has become dry, and from being deep brown has become deep red. Add f℥viij of distilled water, triturate for a few moments, transfer the mixture to a flask, and add fʒss of hydriodic acid prepared by the acidification of two grains of iodine; boil the mixture for a few moments, allow it to cool, filter the solution, and make it up, if necessary, to f℥viij.

Soubeiron.

Triturate together 35 grains of red iodide of arsenic, and 35 grains of red or bin-iodide of mercury, add f℥viij of boiling distilled water, triturate until dissolved, and then filter the solution.

Dose. fʒss night and morning.

LIQUOR MORPHIÆ CITRATIS. *Solution of citrate of morphia.*

Dr. Porter.

℞	Crude opium	℥iv.
	Citric acid	℥ij.

Beat together in a mortar, then add

	Boiling distilled water	Oj.

Triturate well together, let them stand for twenty-four hours, and then filter the solution.

Magendie.

℞	Pure morphia	gr. xvj.
	Citric acid	gr. viij.
	Distilled water	f℥j.

Rub them together until dissolved.

Dose. From 6 to 24 drops in the 24 hours.

LIQUOR MORPHIÆ ACETATIS. *Liquor opii aceticus. Solution of acetate of morphia.*

Houlton.

℞	Crude opium, dried	℥iiss.
	Diluted acetic acid	℥xxxij.

Digest for six days with a gentle heat, and filter. Evaporate the liquor to the consistence of an extract; macerate it in a mixture of f℥v of rectified spirit, and f℥xxxv of distilled water, for 8 days, and filter.

The same strength as tincture of opium.

LIQUOR PLUMBI DIACETATIS DILUTUS. *Diluted solution of diacetate of lead. Goulard water.*

Lond. Ph. 1836.

℞	Solution of diacetate of lead	fʒiss.
	Distilled water	Oj.
	Proof spirit	fʒij.

Mix.

Dubl. Ph. 1826. *Plumbi subacetatis liquor compositus.*

℞	Solution of subacetate of lead	ʒj.
	Distilled water	℥xvj.
	Proof spirit	ʒj.

Mix.

LIQUOR POTASSÆ. *Solution of potash.*

Lond. Ph. 1836.

℞	Carbonate of potash	℥xv.
	Lime	℥viij.
	Distilled water, boiling	cong. j.

Dissolve the carbonate of potash in half a gallon of the water. Sprinkle a little of the water upon the lime in an earthen vessel, and the lime being slaked, add the rest of the water. The liquors being immediately mixed together in a close vessel, shake them frequently until they are cold. Then set by [the mix-

Edin. Ph. 1841. *Potassæ aquæ.*

℞	Carbonate of potash (dry)	℥iv.
	Lime recently slaked	℥ij.
	Water	f℥xlv.

Let the lime be slaked, and converted into milk of lime with seven fluidounces of the water. Dissolve the carbonate in the remaining thirty-eight fluidounces of water; boil the solution, and add to it the milk of lime in successive portions, about an eighth at a time—boiling ture] that the carbonate of lime may subside. Lastly, keep the supernatant liquor, when poured off, in a well-stopped green glass bottle.

Note. Its specific gravity is 1.063. It strongly changes the colour of turmeric to brown. Dilute nitric acid being added, but very few, or no, bubbles of carbonic acid are given out; from the saturated solution scarcely any thing whatever should be precipitated either by carbonate of soda, chloride of barium, or nitrate of silver. From this solution, or from any salt of potash dissolved in water, the precipitate thrown down by chloride of platina is yellowish.

briskly for a few minutes after each addition. Pour the whole into a deep narrow glass vessel for twenty-four hours; and then withdraw with a syphon the clear liquid, which should amount to at least thirty-five fluidounces, and ought to have a density of 1072.

Note. Diluted aqueous solution of potash.—Colourless: sulphuric acid does not occasion effervescence.

Dubl. Ph. 1826. *Aquæ potassæ causticæ.*

℞	Carbonate of potash from potashes of commerce,	
	Fresh burnt lime, āā . . .	2 parts.
	Water	15 „

On the lime in a vessel of earthenware, let one part of hot water be sprinkled, and when the lime is slaked let the salt be immediately mixed with it; then let the remainder of the water be added. When the mixture has cooled, pass it into a well-stopped bottle, and with frequent stirring let it be kept during three days. When the carbonate of lime shall have subsided, let the supernatant liquor be poured off, and inclosed in bottles of green glass most carefully stopped.

The specific gravity of this fluid is to that of distilled water as 1080 to 1000.

Use. Antacid, diuretic and lithontriptic. *Dose.* ♏x to fʒss.

Liquor potassæ brandishii. *Brandish's solution of potash.*

℞	American pearl ashes . .	lbvj.
	Wood ashes (from ash wood) .	lbij.
	Quick lime	lbij.
	Boiling water . . .	cong. vj.

Add first the lime, then the pearl ashes, and afterwards the wood ashes to the boiling water; mix together; let it stand for 24 hours, and then decant the clear liquor.

Liquor potassæ arsenitis. *Solution of arsenite of potash.* Lond. *Liquor arsenicalis.* Edin. and Dubl.

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Arsenious acid,	
	Carbonate of potash, āā .	℈iv.
	Compound tincture of lavender	fʒv.
	Distilled water. . . .	Oj.

Boil the arsenious acid and carbonate

Dubl. Ph. 1826.

℞	Sublimed white oxide of arsenic,	
	Pure carbonate of potash, āā	ʒj.
	Compound spirit of lavender	ʒiv.
	Distilled water . . .	℥viij.

Boil the arsenic and carbonate of potash together in a glass vessel until disof potash with half a pint of the water in a glass vessel until they are dissolved. Add the compound tincture of lavender to the cooled liquor. Lastly, add besides, of distilled water, as much as may be sufficient, that it may accurately fill a pint measure.

solved. To the cooled liquor, add the compound spirit of lavender, and enough water to make the whole f℥viij.

LIQUOR POTASSÆ CARBONATIS. *Solution of carbonate of potash.*

Lond. Ph. 1836.

℞	Carbonate of potash . .	℥xx.
	Distilled water . . .	Oj.

Dissolve the carbonate of potash in the water, and strain.

Note. Specific gravity 1.473.

Dubl. Ph. 1826. *Potassæ carbonatis aqua.*

℞	Carbonate of potash from crystals of tartar . .	1 part.
	Distilled water . .	2 parts.

Dissolve and filter.

Note.—The specific gravity of this solution is to the specific gravity of distilled water as 1320 to 1000.

LIQUOR POTASSÆ CHLORIDIS. *Liquor potassæ chlorinatæ. Eau de Javelle. Solution of chloride of potash.*

Dry chloride of lime (chlorinated lime) .	℥ij.
Carbonate of potash (salt of Tartar) .	℥iv.
Water	Oij.

Mix the chloride of lime with Oiss of the water; dissolve the carbonate of potash in the remainder of the water; mix the two liquors and filter the mixture.

LIQUOR POTASSÆ CITRATIS. *Solution of citrate of potash.*

U. S. Ph. 1840.

℞	Fresh lemon juice	Oss.
	Carbonate of potash, . . .	q. s.

Add the carbonate of potash gradually to the lemon juice till it is perfectly saturated, then filter.

Or,

℞	Citric acid	℥ss.
	Oil of lemons	♏ij.
	Water	Oss.
	Carbonate of potassa . . .	q. s.

Rub the citric acid with the oil of lemons, and afterwards with the water, till it is dissolved; then add the carbonate of potassa gradually till the acid is perfectly saturated, then filter.

LIQUOR POTASSÆ EFFERVESCENS. *Effervescing solution of potash.*

Lond. Ph. 1836.

℞	Bicarbonate of potash . .	ʒj.
	Distilled water . . .	Oj.

Dissolve the bicarbonate of potash in the water; and pass into it, of carbonic acid compressed by force, more than sufficient for saturation. Keep the solution in a well-stopped vessel.

Edin. Ph. 1841. *Potassæ aqua effervescens.*

The same as the London formula.

Note.—A solution of bicarbonate of potash, surcharged with carbonic acid. *Kali water.*

Use. Antacid. diuretic, and lithontriptic.

LIQUOR POTASSII IODIDI COMPOSITUS. *Compound solution of iodide of potassium.*

Lond. Ph. 1836.

℞	Iodide of potassium	gr. x.
	Iodine	gr. v.
	Distilled water	Oj.

Mix, that they may be dissolved.

Edin. Ph. 1841. *Liquor iodinei compositus.*

℞	Iodine	ʒij.
	Iodide of potassium	℥j.
	Distilled water	f℥xvj.

Dissolve the iodide and iodine in the water with gentle heat and agitation.

LIQUOR POTASSÆ SILICATIS. *Solution of silicate of potash.*

Mix together 1 part of powdered quartz or fine white sand, and 2 parts of dry carbonate of potash. Put the mixture into a hessian crucible, and expose it to a white heat until the ingredients are fused; put the fused mass into a shallow vessel, and expose it in a damp place until it has become liquid.

LIQUOR RHEI. *Concentrated infusion of rhubarb.*

This may be made in the same way as the Liquor calumbæ, substituting rhubarb for calumba, in the proportion indicated by the formula for *Infusum rhei.*

LIQUOR SENNÆ. *Essence of senna. Fluid extract of senna. Concentrated infusion of senna.*

Macerate lbij of small or broken senna leaves, and ℥ij ʒiss of bruised ginger, with lbiv of tepid water, temperature 120°, for 24 hours, frequently stirring it up forcibly with a wooden mash-stick; then press out the liquor with a powerful press. Add lbiv more of tepid water to the pressed marc, and repeat the maceration and pressing. Mix the liquors; let them stand for some hours that the dregs may subside, then decant the clear portion, and evaporate it until it shall measure f℥xxviij. Add to this f℥iv of rectified spirit.

This will be eight times the strength of compound infusion of senna. fʒj, mixed with fʒvij of water, is sometimes substituted for *Infusum sennæ compositum.*

LIQUOR SODÆ CHLORINATÆ. *Liquor sodæ chloridis. Solution of chlorinated soda. Solution of chloride of soda. Labarraque's disinfecting solution.*

Lond. Ph. 1836.

℞	Carbonate of soda	lbj.
	Distilled water	f℥xlviij.
	Chloride of sodium	℥iv.
	Binoxide of manganese	℥iij.
	Sulphuric acid	℥iv.

Dissolve the carbonate of soda in 2 pints of the water; then put the chloride of sodium and binoxide of manganese, rubbed to powder, into a retort, and add to them the sulphuric acid, previously mixed with three fluidounces of the water and cooled. Heat (the mixture) and pass the chlorine first through 5 fluidounces of the water, and afterwards into the solution of carbonate of soda above directed.

Note.—At first the colour of turmeric is altered to brown in this solution, afterwards it is destroyed. When dilute hydrochloric acid is added, carbonic acid and chlorine are evolved together; solution of sulphate of indigo is discolourized by the latter; lime is precipitated from lime water by the former.

It may also be made as follows:—

℞	Chloride of lime (chlorinated lime) .	℥ij.
	Carbonate of soda . . .	℥iv.
	Water	Oij.

Mix the chloride of lime with Oiss of the water; dissolve the carbonate of soda in Oss of water; mix the liquors and filter the mixture.

LIQUOR SODÆ EFFERVESCENS. *Effervescing solution of soda.*

Lond. Ph. 1836.

℞	Sesquicarbonate of soda .	ʒj.
	Distilled water . . .	Oj.

Dissolve the carbonate of soda in the water, and pass into it, compressed by force, more carbonic acid than is sufficient for saturation. Keep the solution in a well-stopped vessel.

Note.—The blue colour of litmus at first reddens in this solution: it returns when heated, after the effervescence has ceased.

Edin. Ph. 1841. *Aqua sodæ effervescens.*

℞	Bicarbonate of soda . .	ʒj.
	Water	Oj.

Dissolve the bicarbonate in the water, and saturate it with carbonic acid under strong pressure. Preserve the liquid in well-closed vessels.

Note.—This is a solution of bicarbonate of soda, surcharged with carbonic acid. *Soda water.*

Dubl. Ph. 1826. *Sodæ carbonatis aqua acidula.*

Take of carbonate of soda any required quantity, dissolve it in water, so that each pint shall contain a drachm of carbonate of soda. Then, in an apparatus adapted to retaining the gas, let the liquor be exposed to a stream of carbonic acid gas, which bubbles forth during the solution of white marble in muriatic acid diluted with six times its weight of water; until carbonic acid is superabundant in the liquor.

Use. The purposes for which soda water is ordinarily taken are well known.

LIQUOR TARAXACI. *Extractum taraxaci fluidum. Fluid extract of dandelion.*

Macerate ℔iv of dandelion roots, previously cleaned, sliced, and dried, in enough cold water to cover them, for 24 hours; then press out the liquor, heat it to the boiling point, filter it while hot, evaporate the clear liquor by the heat of a water bath, by spontaneous evaporation, or *in vacuo*, until reduced to f℥xxxvj. Add to this f℥xij of rectified spirit.

Liquor tartari emetici. *Solution of emetic tartar.*

Dubl. Ph. 1826.

℞	Emetic tartar	℈j.
	Boiling distilled water	f℥viij.
	Rectified spirit	f℥ij.

Dissolve the emetic tartar in the water, and add the spirit to the filtered solution.

Liquor volatilis cornu cervi. *Spiritus volatilis cornu cervi. Spirit of hartshorn.*

This name was originally applied to the watery liquor obtained when harts' horns were submitted to destructive distillation. It consisted of a solution of carbonate of ammonia, contaminated with empyreumatic oil. A similar liquor is now obtained in the distillation of bones, in making animal charcoal, and this liquor is used as one of the sources of the ammonia of commerce. The liquid now sold as spirit of hartshorn is either a weak solution of ammonia or a solution of carbonate of ammonia, or a mixture of the two.

Litmus. *Lacmus. Turnsole.*

A blue pigment supposed to be obtained from *Rocella tinctoria*, or *Lecanora tartarea.* The process by which it is made is not known, but it is thought to be similar to that for making *orchil*, except that carbonate of lime is used to form a paste which is subsequently dried.

Lixivium. (From *lix*, formerly signifying water or liquor in general.)

A liquor obtained from ashes, or from saline matter, the whole of which is not soluble.

Loadstone.

An ore of iron which possesses the peculiar properties of attracting iron, and of turning one of its poles towards the north, when freely suspended.

Lotio.

A lotion or wash; a liquid remedy, intended for external application. This generic term comprehends embrocations, fomentations, liniments, collyria, &c.

Lupulina. *Lupuline. Lupulinic grains.*

These are obtained by rubbing the strobiles of the *Humulus lupulus* over a sieve, when the lupulinic grains pass through. They may be further purified by winnowing.

The term *Lupuline* is sometimes applied to the bitter principle obtained by treating an aqueous extract of the *Lupulinic grains* united with a little lime, with alcohol, evaporating the alcoholic tincture to dryness, and washing it with ether. The residue is *Lupuline*, or *Lupulite.*

Macaroni.

A dried paste or dough, made of wheat flour from which some of the starch has been separated. It is either in pipes, about the size of a goose-quill, or in flat strips, or riband-shaped pieces. It is a favourite article of diet among the Italians.

MAGISTERY.

A term formerly applied to white precipitates, apparently spontaneously formed, as in the dilution of metallic solutions with water.

MAGNESIA. *Symb.* MgO. *eq.* 20.

This, which is one of the alkaline earths, is the oxide of a metal, magnesium. It is used in medicine under the popular name of *Calcined magnesia.* The Colleges direct it to be prepared as follows:—

Magnesia. Magnesia calcinata. Calcined magnesia.

Lond. Ph. 1836.

℞ Carbonate of magnesia . ℥iv.

Burn it for two hours in a very strong fire.

Note.—Dissolves in hydrochloric acid without effervescence. Neither bicarbonate of potash, nor chloride of barium throw down anything from the solution. It turns turmeric slightly brown.

Edin. Ph. 1841.

Take any convenient quantity of carbonate of magnesia, expose it in a crucible to a full red heat for two hours, or till the powder, when suspended in water, presents no effervescence on the addition of muriatic acid. Preserve the product in well-closed bottles.

Note.—Fifty grains are entirely soluble, without effervescence, in a fluidounce of muriatic acid; an excess of ammonia occasions in the solution only a scanty precipitate of alumina: the filtered fluid is not precipitated by solution of oxalate of ammonia.

Dubl. Ph. 1826.

℞ Carbonate of magnesia, any required quantity; pass it into a crucible, and expose it to a strong heat during two hours. When the magnesia has cooled, preserve it in a glass vessel.

As thus prepared, it is a white, very light, and soft powder. It is frequently taken as an antacid and laxative, in doses of ʒss or ʒj.

MAGNESIA CALCINATA PONDEROSA. *Heavy calcined magnesia.*

Phillips.

Dissolve 123 parts of crystallized sulphate of magnesia in boiling water. Dissolve 144 parts of crystallized carbonate of soda in boiling water. Mix the two solutions, and evaporate the mixture to dryness. Calcine the dry residue in a crucible for two hours, or until the whole of the carbonic acid is expelled; then treat the powder which remains with water until the whole of the soluble salt is removed, and dry the residue.

The magnesia thus obtained will be much more dense than that prepared by the preceding processes.

MAGNESIÆ CARBONAS. *Carbonate of magnesia.*

Lond. Ph. 1836.

℞ Sulphate of magnesia	lbiv.
Carbonate of soda	lbiv. and ℥viij.
Distilled water	cong. iv.

Dissolve separately the carbonate of soda and sulphate of magnesia in two gallons of the water, and strain; then mix and boil the liquors, stirring constantly with a spatula for a quarter of an hour; lastly, the liquor being poured off, wash the precipitated powder with boiling distilled water, and dry it.

Note.—The water in which it is boiled does not alter the colour of turmeric; chloride of barium or nitrate of silver added to the water does not precipitate anything. One hundred parts dissolved in dilute sulphuric acid lose 36·6 parts in weight. When the effervescence has ceased, bicarbonate of potash does not precipitate anything from this solution.

Edin. Ph. 1841.

The same as the London formula.

Note.—When dissolved in an excess of muriatic acid, an excess of ammonia occasions only a scanty precipitate of alumina; and the filtered fluid is not precipitated by oxalate of ammonia.

Dubl. Ph. 1826.

℞ Sulphate of magnesia	25 parts.
Carbonate of potash	24 „
Boiling water	400 „

Let the sulphate of magnesia and carbonate of potash be dissolved in 200 parts of water. Let the depurated liquors be mixed. Boil the mixture for a short time, and filter it whilst warm through an extended cloth adapted to collecting the magnesia. Let the sulphate of potash be washed off by the repeated effusion of hot water; lastly, let the carbonate of magnesia be dried.

MAGNESIÆ CARBONAS PONDEROSA. *Heavy carbonate of magnesia.*

Phillips.

Dissolve 123 parts of crystallized sulphate of magnesia in boiling water. Dissolve 144 parts of crystallized carbonate of soda in boiling water. Mix the two solutions and evaporate the mixture to dryness; then treat the residue with water until the whole of the soluble salt is removed, and dry the powder which remains.

This powder will be much more dense than that prepared according to the processes of the Pharmacopœias.

MAGNESIÆ HYDROCHLORAS. *Hydrochlorate of magnesia.*

Codex, 1837.

Add hydrochloric acid to carbonate of magnesia diffused through water, until a neutral solution is obtained, having a slight excess of magnesia. Filter the solution, and evaporate it until crystals shall form on cooling. It is a deliquescent salt.

MAGNESIÆ SULPHAS. *Sulphate of magnesia. Epsom salt*

1.

Magnesian lime stone, or *Dolomite*, is heated with dilute sulphuric acid, until the carbonates are converted into sulphates of lime and magnesia. The latter of these is then separated by solution and crystallization.

2.

Bittern, the residual liquor of seawater, from which the common salt been separated, is considerably concentrated, the chloride of sodium which is deposited during the concentration being removed, the liquor is then allowed to crystallize. The rough crystals thus obtained are called *Single Epsom salts.* When crystallized, they are called *Double Epsom salts.*

MANGANESIUM. *Manganese. Symb.* Mn. *eq.* 28.

A hard, brittle, greyish-white metal. Sp. gr. about 8. It is obtained from the oxide, by exposing it to an intense heat, mixed with charcoal.

MANGANESII PEROXIDUM. *Peroxide of manganese. Black oxide of manganese. Magnesia nigra. Black magnesia.*

This is an abundant mineral product. It is found in large quantities in the West of England. The blackest samples are esteemed the best. It is used as a source of oxygen gas, and for producing chlorine from hydrochloric acid. It is also used in small quantities for rendering glass colourless; in larger quantities it gives it a purple colour.

MANGANESII SULPHAS. *Sulphate of manganese.*

This salt is prepared on the large scale in the following manner:—Peroxide of manganese is mixed with coals, and the mixture heated to redness in a close vessel. The impure protoxide, thus obtained, is dissolved in sulphuric acid, and a little hydrochloric acid added towards the end of the process. The solution is evaporated to dryness, and the residue heated to redness to decompose the salts of iron that may be present. It is now treated with water, which dissolves the sulphate of manganese, and on evaporation and cooling this salt will crystallize out in large rose-coloured crystals.

Med. use. It is given in doses of a drachm or two drachms, dissolved in half a pint of water, as a cathartic, and for promoting bilions evacuations. It has been recommended by Mr. Alexander Ure as a remedy for gout.

MANNITA. *Mannite. Manna sugar. Mushroom sugar.* $C^6H^7O^6$.

Melt six pounds of common manna (sorts) over the fire with about half its weight of rain-water, in which the white of an egg has been previously beaten; boil them together for a few minutes, and then strain the mixture through a linen cloth. The strained liquid will solidify on cooling. It will present the following characters: it will be a pale brown mass, which, on triturating it, will become pulpy, and somewhat similar to common honey. Submit this mass to strong pressure in a cloth; mix the pressed cake with its own weight of cold water, and again press it. The pressed cake is now to be dissolved in boiling water, some animal charcoal added, and the mixture filtered into a porcelain dish placed over the fire, and the clear solution evaporated to a pellicle, and then put to crystallize.

It will form quadrangular prisms, perfectly white and transparent, and larger, than when crystallized from spirit. It is incapable of undergoing fermentation.

Marasquina.

A liqueur made with Morello cherries.

Marmalade. (From *Marmello*, Portuguese, *a quince.*)

Properly a conserve of quinces. The term, however, is applied to conserves of a variety of fruits, especially oranges, which are cut into thin slices, and preserved in a strong syrup.

Massicot.

The oxide which forms on melted lead exposed to a current of air, and calcined until it acquires a yellow colour.

Masticatoria. *Masticatories. Pilæ masticatoriæ.*

Medicines taken by chewing; used chiefly as stimulants.

1. *Quincy.*

℞	Mastic	℥iij.
	Pellitory of Spain root	ʒij.
	Stavesacre seeds	ʒij.
	Angelica root	ʒss.
	Cubebs, Nutmegs, āā	ʒj.

White wax, q. s. to form into balls.

2. *Augustin.*

℞	Mastic,	
	White wax,	
	Pellitory of Spain root, āā	ʒss.

Mix; form into a paste with heat, and divide into 3 balls.

In India a mixture of betel leaf, areca nut, and lime, is used as a masticatory. The principal masticatory at present used in this country is pigtail or shag tobacco.

Matches for obtaining instantaneous light by chemical action.

Chlorate matches.

1.

℞	Chlorate of potash	℈ij.
	White sugar	gr. xij.
	Sulphur	gr. viij.
	Powdered tragacanth	gr. iv.
	Vermilion	gr. vj.

Reduce the ingredients separately to powder, mix them together, form them into a paste with water, dip the ends of the matches into the paste, and dry them.

2.

℞	Chlorate of potash	ʒj.
	Sulphur	gr. vj.
	White sugar	gr. vj.
	Powdered gum arabic	gr. v.
	Golden sulphuret of antimony	gr. v.

Mix into a paste with water, and apply as No. 1.

These matches ignite on being dipped into a bottle containing asbestos wetted with strong oil of vitriol.

Congreve, or lucifer matches.

1.

℞	Gum arabic	16 parts.
	Phosphorus reduced to powder	9 „
	Nitrate of potash	14 „
	Black oxide of manganese	18 „

Made into a paste with water, and the matches dipped into it.

2.

℞	Phosphorus	4 parts.
	Nitrate of potash	10 „
	Glue	6 „
	Red lead	5 „
	Smalt	2 „

The glue is first soaked in cold water, then put into a heated mortar, so as to liquefy it, the phosphorus is then added, then the nitre, red lead, and smalt, and the whole mixed into a homogeneous mass, the temperature being never allowed to exceed 167° Fah. The matches are dipped into this paste, and then dried.

These matches ignite on being rubbed over a rough surface.

The phosphorus may be reduced to a state of minute division, suitable for use in these preparations, by putting it into a flask or bottle with some spirit, immersing the bottle in hot water until the phosphorus is melted, then briskly agitating it until cold.

MAYDEW. *Ros majalis.*

The dew collected off the grass with sponges; used as a cosmetic.

MEAD.

An old English liquor made from honeycombs after the honey has been drained out, by boiling them in water and then fermenting.

MEDICAMENTA ARCANA. *Patent or proprietary medicines.*

Anderson's pills.

℞ Barbadoes aloes, Jalap, and Oil of aniseed. (Paris.)

Asthmatic elixir.

℞	Opium	℥j.
	Camphor	ʒv.
	Oil of anise	℥j.
	Proof spirit	cong. j.

Bacher's tonic pills.

℞	Extract of hellebore	℥ss.
	Myrrh	℥ss.
	Powdered carduus benedictus	ʒiij.

Made into pills, gr. j. each. (Paris.)

Barclay's antibilious pills.

℞	Extract of colocynth	ʒij.
	Resin of jalap	ʒj.
	Soap	ʒiss.
	Guaiacum	ʒiij.
	Potassio-tartrate of antimony	grs. viij.
	Essential oils of juniper, Caraway, Rosemary, āā	gtt. iv.
	Syrup of buckthorn	q. s.

To be divided into 64 pills. (Paris.)

Bates's anodyne balsam. Balsamum anodynum.

1.

℞	White soap	℥iv.
	Opium	℥j.
	Camphor	℥ij.
	Oil of rosemary	℥ss.
	Spirit of wine	lbij.

2.

℞	Castile soap, Camphor, āā	℥ij.
	Opium	ʒiv.
	Saffron	℥j.
	Spirit of wine	℥xviij.

Bateman's pectoral drops.

℞ Tincture of castor, Camphor, and Opium, flavoured with aniseed, and coloured by cochineal. (Paris.)

Black drop.

Dr. Armstrong.

℞	Opium	lbss.
	Nutmegs	℥iss.
	Saffron	℥ss.
	Verjuice	Oiij.

Boil to a proper consistence, then add ℥ij. of yeast, set it in a warm place for six or eight weeks, then in the open air until it acquires the consistence of a syrup, when it is to be decanted, filtered, and bottled up with a little sugar added to each bottle. One drop is equal in strength to three drops of laudanum.

Chelsea pensioner.

℞	Guaiacum	ʒj.
	Rhubarb	ʒij.
	Bitartrate of potash	℥j.
	Sulphur	℥j.
	Nutmeg	No.1.
	Honey	lbj.

or q. s. to form an electuary.

Ching's worm lozenges.

Yellow lozenges.

Boil ℥ss of saffron in Oj of water and strain; then add lbj of calomel, and lbxxviij of white sugar, mix them well together, and add mucilage of tragacanth enough to form a lozenge paste, to be divided into lozenges containing gr. j of calomel each.

Brown lozenges.

℞	Calomel	℥viij
	Resin of jalap	lbiijss.
	White sugar	lbix.
	Mucilage of tragacanth	q. s.

Mix, and make into lozenges each containing gr. ss of calomel. (Paris.)

Daffy's elixir.

℞	Senna	lbss.
	Jalap, sliced,	
	Aniseed,	
	Carraway seed, āā	℥j, ʒij.
	Juniper berries	℥iiss.
	Proof spirit	Ovj

Macerate for 14 days, then add,

Treacle	℥xss.
Water	lbj. ℥v.

Mix, and strain.

Dalby's carminative.

℞	Carbonate of magnesia	℈ij.
	Oil of peppermint.	♏j.
	Oil of nutmegs	♏ij.
	Oil of aniseed	♏ iij.
	Tincture of castor	♏xxx.
	Tincture of assafœtida	♏xv.
	Tincture of opium	♏v.
	Spirit of pennyroyal	♏xv.
	Componnd tincture of cardamoms	♏xxx.
	Peppermint water	f℥ij.

Mix.

Davidson's remedy for cancer.

Arsenious acid and powdered hemlock. (Paris.)

Dixon's antibilious pills.

℞ Aloes, scammony, rhubarb, and potassio tartrate of antimony. (Paris.)

Dinner pills. Lady Webster's pills. Lady Crespigny's pills.

℞	Aloes	ʒvj.
	Mastich and red rose leaves, āā	ʒij.
	Syrup of wormwood	q. s.

Divide into pills grs. iij each. (Paris.)

Essence of coltsfoot.

Equal parts of balsam of Tolu and Compound tincture of benzoin, to which is added double the quantity of rectified spirit. (Paris.)

Ford's balsam of horehound.

℞	Horehound, herb,	
	Liquorice root, āā	lbiijss.
	Water	Oviij.

Infuse for twelve hours, then strain off Ovj, to which add

Camphor	℥j ʒij.
Opium,	
Benzoin, āā	℥j.
Dried squills	℥ij.
Oil of aniseed	℥j.
Proof spirit or brandy	Oxij.

Macerate for a week, then add

Honey	lbiijss.

Mix and strain.

Fothergill's pills.

℞ Aloes, scammony, colocynth, and oxide of antimony. (Paris.)

Freeman's bathing spirits.

1.

℞ Soft soap	lbvj.
Camphor	℥viij.
Spirit of wine,	
Water, āā	cong. iij.

M. S. A.

2.

℞ Soft soap	℥xij.
Camphor	℥ij.
Carbonate of potash	ʒss.
Proof spirit	Oxiv.
Daffy's elixir	℥iv.

Mix.

Godfrey's cordial.

℞ Treacle	lbvij.
Water	Oviij.
Tincture of opium	℥iv.
Rectified spirit	ʒvj.
Oil of sassafras	ʒss.

Mix.

Gowland's lotion.

℞ Bichloride of mercury	gr. iss.
Emulsion of bitter almonds	℥j.

(Paris.)

Greenhough's tincture for the teeth.

℞ Bitter almonds	℥ij.
Brazil wood,	
Florentine orris root, āā	ʒij.
Cochineal,	
Salt of sorrel,	
Alum, āā	ʒj.
Spirit of wine	Oij.
Spirit of scurvy grass	ʒiiij.

Mix.

Hatfield's tincture.

℞ Guaiacum and soap (equal parts)	ʒij.
Rectified spirit	Oiss.

(Paris.)

Hill's essence of bardona.

℞ Guaiacum	℥j.
Spirit	℥iij.

(Paris.)

Herrenschwand's specific.

℞ Gamboge	grs. x.
Carbonate of potash	grs. xx.

(Paris.)

Hill's balsam of honey.

1.

℞ Balsam of Tolu	lbj.
Honey	lbj.
Rectified spirit	cong. j.

2.

℞ Balsam of Tolu	℥ij.
Styrax	ʒij.
Opium	℥ss.
Honey	℥viij.
Rectified spirit	Oij.

Pectoral,—used in coughs and colds.

Hooper's pills.

℞ Pil. aloes cum myrrha, Sulphate of iron, Canella, and Ivory black. (Paris.)

Jackson's bathing spirits.

℞ Soft soap	lbij.
Camphor	℥xij.
Oils of rosemary and thyme āā	℥jss.
Spirits of wine	cong. ij.

James's analeptic pills.

℞ James's powder, Gum ammoniacum, and Pil. aloes cum myrrha, equal parts, Tincture of castor, q. s. (Paris.)

Jesuit's drops. Balsamum polychrestum. Elixir antivenereum.

℞ Guaiacum	℥vij.
Peruvian balsam	ʒiv.
Sarsaparilla	℥v.
Spirit of wine	Oiij.

Macerate and strain.

Kirkland's neutral cerate.

℞ Lead plaster	℥viij.
Olive oil	℥iv.

Melt, and while fluid add

Prepared chalk	℥iv.

Stir until sufficiently cooled, then add

Acetic acid	f℥iv.
Acetate of lead	ʒiij.

Mix. (Paris.)

Marshall's cerate.

℞	Palm oil	℥v.
	Calomel	℥j.
	Acetate of lead	℥ss.
	Nitrate of mercury	℥ij.

(Paris.)

Mathew's vermifuge.

For destroying the worms.

℞	Tin filings	℥j.
	Male fern root	ʒvj.
	Santonica seeds	℥ss.
	Extract of jalap	ʒj.
	Sulphate of potash	ʒj.

Honey, q. s. to form an electuary. A teaspoonful to be taken for a dose.

For expelling the worms.

℞	Powdered jalap,	
	Sulphate of potash, āā	℈ij.
	Scammony	℈j.
	Gamboge	gr. x.
	Honey	q. s.

Matthew's pills. Starkey's pills.

℞ Black hellebore root, Liquorice, and Turmeric, Opium, Castille soap, and Syrup of saffron, equal parts, made into pills with oil of turpentine. (Paris.)

Moxon's effervescent magnesia.

℞	Carbonate of magnesia	℥j.
	Sulphate of magnesia	℥ij.
	Bicarbonate of soda	℥ij.
	Tartrate of potash and soda	℥ij.
	Tartaric acid	℥ij.

To be perfectly freed from water of crystallization, and mixed and kept in a well-corked bottle.

Norris's drops.

Solution of potassio-tartrate of antimony in spirit, disguised by the addition of colouring matter. (Paris.)

Norton's drops. Ward's white drops. Marsden's drops. Green's drops. Solomon's anti-impetigenes.

These are all disguised solutions of bichloride of mercury.

Pate arsenicale.

℞	Cinnabar	gr. 70.
	Dragon's blood	gr. 22.
	Arsenious acid	gr. 8.

Made into a paste with saliva at the time of applying. A favourite remedy of the French surgeons. (Paris.)

Peter's pills.

℞	Aloes,	
	Jalap,	
	Scammony,	
	Gamboge, āā	ʒij.
	Calomel	ʒj.

(Paris.)

Radcliffe's elixir.

℞	Aloes	ʒvj.
	Cinnamon,	
	Zedoary, āā	ʒss.
	Rhubarb	ʒj.
	Cochineal	ʒss.
	Syrup of buckthorn	f℥ij.
	Proof spirit	Oj.
	Water	℥v.

(Paris.)

Roche's embrocation for the hooping cough.

℞	Olive oil	℥ij.
	Oil of cloves	℥j.
	Oil of amber	℥j.

Mix. (Paris.)

Struve's lotion for hooping cough.

℞	Potassio-tartrate of antimony	ʒj.
	Water	℥ij.
	Tincture cantharides	℥j.

(Paris.)

Scot's drops. Tinctura fuliginis.

℞	Wood soot	℥ij.
	Assafœtida	℥j.
	Proof spirit	lbij.

Dose ʒss to ʒiss in hysteria.

Smellom's ointment for the eyes.

℞	Verdigris	ʒss.

Finely powdered and rubbed with oil.

	Basilicon	℥j.

(Paris.)

Singleton's golden ointment.

Sulphuret of arsenic (realgar) and Lard, or Spermaceti ointment.

The nitric oxide of mercury ointment of the pharmacopœia is sold under this name. (Paris.)

Speediman's pills.

℞ Aloes, Myrrh, Rhubarb, Extract of chamomile, and Essential oil of chamomile. (Paris.)

Steer's opodeldoc.

℞	Castile soap	℥j.
	Rectified spirit	f℥viij.
	Camphor	ʒiijss.
	Oil of rosemary	ʒss.
	Oil of thyme	ʒj.
	Solution of ammonia	ʒvj.

(Paris.)

Tasteless worm medicine.

℞	Santonine	ʒj.
	Sugar	℥v.
	Gum tragacanth	ʒss.

Make into 144 lozenges: of these a child may take 5 to 10 daily.

Taylor's remedy for deafness.

℞ Garlic, Oil of almonds. Infuse and colour with alkanet. (Paris.)

Toothache tincture.

℞	Tannin	℈j.
	Mastich	gr. v.
	Ether	ʒij.

Mix. To be applied to the tooth, previously dried, on cotton wool.

Velno's vegetable syrup.

℞	Fresh burdock root, sliced	℥ij.
	Dandelion root	℥j.
	Spear mint	℥j.
	Senna,	
	Coriander,	
	Liquorice root, āā	ʒiss.
	Water	Oiss.

Boil gently to Oj and strain; when cold add

Sugar	lbj.

Boil to a syrup, and add a small quantity of a solution of bichloride of mercury. (Paris.)

MEDICAMENTA VETERINARIA. *Veterinary medicines.*

For internal application.

ALTERATIVES.

Alteratives (from *altero*, I change) are medicines intended to re-establish the healthy functions of the animal economy, without producing any very sensible evacuation. Antimony frequently enters into the composition of the veterinary medicines of this description.

Alterative balls.

1.

℞	Spiked aloes	℥iv.
	Soft soap	℥iv.
	Linseed meal,	
	Treacle, āā	lbj.

Mix into a mass, to be divided into balls weighing ℥j each. (Morton.)

2.

℞	Spiked aloes	℥viij.
	Soft soap	℥viij.
	Linseed meal,	
	Treacle, āā	℥viij.

Mix into a mass, to be divided into balls weighing ℥j each. (Morton,)

3.

℞	Barbadoes aloes	ʒjss.
	Potassio-tartrate of antimony	ʒj.
	Soap	ʒij.
	Linseed meal and Treacle, each sufficient to form a ball.	

4.

℞	Sulphur	lbj.
	Nitrate of potash,	
	Sesquisulphuret of antimony,	
	Fœnugreek seeds, powd., āā	lbss.
	Venice turpentine	℥xij.
	Treacle, sufficient to form a mass.	

To be divided into balls of ℥jss each.

5.

℞	Sesquisulphuret of antimony,	
	Nitrate of potash,	
	Sulphur,	
	Ethiop's mineral, āā	℥iij.
	Soap	℥x.
	Oil of juniper	ʒiij.

Mix, to form 12 balls. (J. Bell and Co.)

6.

℞ Sulphur,
Nitrate of potash
Sesquisulph. of antimony, āā lbj.
Resin . . . lbss.
Treacle and Linseed meal, sufficient to form a mass
To be divided into balls of ℥jss each.

Alterative powders.

1.

℞ Sulphur . . . 2 parts,
Sesquisulphuret of antimony,
Nitrate of potash, āā . 1 part.

Mix into a powder, of which ℥ss or ℥j is to be given for a dose. (Morton.)

2.

℞ Sesquisulphuret of antimony,
Bitartrate of potash,
Nitrate of potash, āā . ʒij.
Mix into a powder. (Blaine.)

3.

℞ Sulphur . . . ℥ss.
Bitartrate of potash,
Nitrate of potash, āā . ʒij.
Mix into a powder. (Blaine.)

4.

℞ Sesquisulphuret of antimony ℥iv.
Sulphur . . . ℥ij.
Bean flour, or Barley meal . lbss.

Mix into a powder. A tablespoonful for a dose. (Bracy Clark.)

ANTHELMINTICS.

Anthelmintics (from ἀντὶ, *against*, and ἕλμινς, *a worm*) are medicines for destroying and causing the evacuation of worms from the stomach and intestines.

Worm balls.

1.

℞ Barbadoes aloes . . ʒiv.
Calomel . . . ʒj.
Ginger,
Soap, āā . . . ʒij.
Oil of cloves . 10 drops.
Treacle, sufficient to form a ball.

2.

℞ Barbadoes aloes . . ʒiv.
Powdered tin . . ʒiij.
Ginger . . . ʒj.
Soap . . . ʒij.
Treacle, sufficient to form a ball.

3.

℞ Barbadoes aloes . ʒv to ℥j.
Powdered tin . . ʒij.
Ethiop's mineral . ʒij.
Powdered ginger . ʒj.
Oil of aniseed . . gtt. xx.
Oil of savine . . gtt. xx.
Treacle, sufficient to form a ball.
(J. Bell and Co.)

Worm drench.

1.

℞ Common salt . . ℥iv.
Powdered aloes . . ʒij.
Water . . . Oij.
Mix.

2.

℞ Oil of turpentine . . f℥iv.
Oatmeal gruel . . Oj.
Mix.

3.

℞ Oil of turpentine . . f℥iv.
Castor oil or linseed oil . f℥viij.
Oatmeal gruel . . ℥viij.
Mix.

ANTISPASMODICS, NARCOTICS, AND SEDATIVES.

Antispasmodics, (from *αντι*, *against*, and *σπασμος*, a *spasm*,) are medicines which possess the power of allaying or removing inordinate or painful motions in the system, especially those involuntary contractions which take place in muscles naturally subject to the command of the will. *Narcotics* (*ναρκοω*, to *stupify*) medicines which have the power of procuring sleep; and *sedatives* (from *sedo*, to ease or assuage)—medicines which have the power of diminishing the animal energy, without destroying life, are used to allay or diminish spasmodic action in the body.

Veterinary medicines.

Antispasmodic Draughts.

1.

℞	Tincture of opium	℥j.
	Spirit of nitric ether	℥ij.
	Aloes	℥ss.
	Proof spirit	℥ss.
	Water	℥iv.

Mix for a draught. (Morton.)

2.

℞	Opium, camphor, āā	℥ij.
	Spirit of hartshorn	℥j.
	Oil of turpentine	℥ij.
	Strong ale	Oj.

Mix for a draught. (Blaine.)

3.

℞	Pepper	℥ss.
	Oil of turpentine	℥iij.
	Tincture of opium	℥j.
	Strong ale	℥x.

Mix for a draught, (Blaine.)

4.

℞	Tincture of opium	℥ij.
	Ether	℥j.
	Oil of peppermint	ʒj.
	Strong ale and gin, each	℥v.

Mix for draught. (Blaine.)

5.

℞	Oil of turpentine	℥ij.
	Oil of peppermint	ʒj.
	Castor oil	℥vj.
	Tincture of aloes	℥iij.

Mix for a draught. (Blaine.)

6.

℞	Pepper	℥ss.
	Gin	℥v.
	Strong ale	℥v.

Juice of two or three large onions.
Mix for a draught. (Blaine.)

7.

℞	Assafœtida	℥ss.
	Squills	ʒj.
	Soap	ʒij.
	Oil of turpentine	ʒij.
	Balsam of Peru	ʒss.
	Water	℥iv.

Mix for a draught. (White.)

8.

℞	Digitalis	ʒss.
	Extract of hemlock	ʒij.
	Water	Oss.

Mix for a draught. (White.)

Antispasmodic Clyster.

℞	Decoction of poppies	cong. j.
	Camphor (dissolved in spirit)	℥j.

Mix. (Blaine.)

CATHARTICS.

Cathartics (from *καθαιρω, to purge*) are medicines which, taken internally, increase the number of alvine evacuations. Aloes are generally considered the best cathartic medicine for horses, and form the basis of most medicines of this kind.

Cathartic or Physic Balls.

1.

℞	Aloes	lbviij.
	Olive oil	lbj.
	Treacle	lbiij.

Melt over a water-bath. Dose from ʒvj to ʒxij. (Morton.)

2.

℞	Cape Aloes	ʒvj.
	Croton oil	gtt. v.

Mix for a ball. (Morton.)

3.

℞	Barbadoes aloes	ʒv.
	Oil of caraway	gtt. x.
	Palm oil	ʒiij.
	Ginger	ʒss.

Mix for a ball. (Blaine.)

4.

℞	Barbadoes aloes	℥viij.
	Ginger	℥j.
	Soap	℥j.
	Treacle	q. s.

Melt at a moderate heat to form a mass. Dose from ʒv to ʒx. (J. Bell and Co.)

5.

Melt the best Barbadoes aloes with one-fifth of its weight of treacle in a water-bath, and mix them well together. From ʒviij to ʒx for a dose. (Bracy Clark.)

CORDIALS, STIMULANTS, AND EXPECTORANTS.

Cordials and *stimulants* are medicines which possess warm and stimulating properties, which are capable of exciting the animal energy, and which are generally given to raise the spirits.

Expectorants (from *expectoro*, to discharge from the breast) are medicines which increase the discharge of mucus from the lungs, and thereby remove or alleviate coughs and difficulty of breathing.

Cordial Balls.

1.

℞ Ginger, in powder	lbj.
Gentian, in powder	lbj.

Honey or palm oil sufficient to form a mass.

Dose from ℥j to ℥iss. (Morton.)

2.

℞ Coriander seed, in powder	℥viij.
Gentian, in powder	℥viij.
Ginger, in powder	℥iv.
Caraway seed, in powder	℥viij.
Oil of aniseed	℥ss.

Honey or palm oil sufficient to form a mass.

Dose ℥iss. (Blaine.)

3.

℞ The mass No. 2	℥jss.
Powdered myrrh	ʒj.
Balsam of Tolu	ʒj.

Mix to form a ball. (Blaine.)

4.

℞ The mass No. 2	℥j.
Opium	gr. xx.
Camphor	ʒj.

Mix to form a ball. (Blaine.)

5.

℞ Pimento, in powder	lbj.
Barley meal	lbij.

Treacle or honey sufficient to form a mass.

Dose ℥iss. (Bracy Clark.)

6.

The mass No. 5, with the addition of a little ginger, cinnamon, or white or cayenne pepper. (Bracy Clark.)

7.

℞ Aniseed, in powder	lbj.
Gentian, in powder	lbj.
Cascarilla, in powder	lbj.

Honey sufficient to form a mass.

Dose ℥iss. (Blaine.)

Cordial Drinks.

1.

℞ Decoction of chamomile	Oiij.
Decoction of aloes	℥iv.
Ginger, in powder	℥ss.
Sulphate of iron	℥iss.

Mix and divide into four doses. (Blaine.)

2.

℞ Gripe tincture*	f℥iv.
Water	f℥viij.

Mix for a dose. (Bracy Clark.)

3.

℞ Ginger in powder	ʒij. to ʒiv.
Strong ale (warm)	Oj.

Mix for a dose. (Morton.)

4.

℞ Caraway seeds, in powder	℥ss. to ℥i.
Strong ale (warm)	Oj.

Mix for a dose. (Morton.)

5.

℞ Caraway seeds, in powder	℥ss.
Ginger, in powder	ʒss.
Carbonate of soda	ʒj.
Brandy	℥j.
Water	℥viij.

Mix for a dose. (Gray.)

6.

℞ Aromatic spirit of ammonia	ʒij.
Common salt	℥j.
Water	Oss.

Mix for a dose. (Gray.)

7.

℞ Barbadoes aloes	ʒiij.
Cascarilla, in powder	ʒij.

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* *Gripe Tincture.*—℞ Pimento, in powder, lbj.—Rectified spirit and water, of each Oiij. Macerate for seven days and strain.

Veterinary medicines.

	Oil of peppermint	gtt. xx.
	Tincture of Cardamoms	℥j.
	Water (warm)	Oj.

Mix for a dose. (Gray.)

Cough Balls.

1.

℞	Ammoniacum	℥ss.
	Powdered squill	ʒj.
	Soap	ʒij.

Honey enough to form a ball for one dose. (White.)

2.

℞	Assafœtida	ʒiij.
	Galbanum	ʒj.
	Carbonate of ammonia	ʒss.
	Ginger	ʒiss.

Honey sufficient to form a ball for one dose. (White.)

3.

℞	Camphor	ʒiss.
	Powdered squills	ʒj.
	Balsam of tolu	ʒj.
	Ginger, in powder	ʒij.

Honey sufficient to form a ball for one dose. (White.)

4.

℞	Aloes	℥ij.
	Digitalis, in powder	℥j.
	Liquorice, in powder	℥xiij.

Honey or Barbadoes tar sufficient to form a mass.

Dose ℥j twice a day. (Morton.)

5.

℞	Ipecacuanha	ʒj.
	Camphor	ʒij.
	Liquorice powder	℥ss.

Honey sufficient to form a ball.

To be given every morning. (Blaine.)

6.

℞	Liquorice powder	℥ss.
	Linseed or barley meal	℥j.
	Tar	ʒss.

Honey sufficient to form a ball.

(Bracy Clark.)

7.

℞	Emetic tartar	gr. x. to gr. xv.
	Digitalis	ʒss. to ʒj

Honey sufficient to form a ball.

This may be given to cattle, or sheep, in the above dose. (Morton.)

8.

℞	Digitalis	gr. j. to gr. ij.
	Liquorice powder	ʒij.

Honey sufficient to form a ball.

(Morton.)

Cough Drink.

℞	Cold drawn linseed oil	℥ij.
	Liquor potassæ	℥j.
	Treacle	℥j.
	Water	℥x.

Mix for a dose. (Bracy Clark.)

DEMULCENTS AND RESTORATIVES.

Demulcents, (from *demulceo,* to soften), are softening and diluting medicines, intended to sheath the parts with which they come in contact, and protect them from irritating secretions or substances. The substances administered as demulcents, frequently act at the same time as *restoratives,* such as gruel and bran mashes.

Demulcent Drenches.

1.

℞	Linseed, bruised	℥iv.
	Boiling water	Oiij.
	Honey	℥iv.

Let it stand till cold. To be given in two doses.

2.

℞	Marshmallow root	℥iv.
	Water	Oij.

Boil for a few minutes, and strain, then add,

	Honey	℥iv.
	Linseed oil	℥ij.
	Gum arabic	℥ij.

Mix. For two doses.

Bran Mash.

Put half a peck of bran into a pail and pour enough boiling water over it to thoroughly wet it; stir it well with a stick, cover it over and let it stand until of the temperature of new milk. Oats, malt, treacle, or honey, may be added to it, to render it more nutritious.

(Bracy Clark.)

Veterinary medicines.

Malt Mash.

To be made with malt in the same way as the bran mash.

Blanch Water.

Pour boiling water over three or four handfuls of bran; stir it well up with a stick; cover it over, and let it stand for a few minutes; then add as much water as may be desired.

It is useful in cases of inflamed lungs or bowels, and after purging physic, being in these cases preferable to mere water. (Bracy Clark.)

Oatmeal Gruel.

Put half a pint of good fresh oatmeal into a bowl, add about half a pint of cold water to it, and with a wooden spoon, beat it well up for some time; then boil it with more water to form a gallon of gruel.

Gruel for horses ought not to be thick. (Bracy Clark.)

DIURETICS AND DIAPHORETICS.

Diuretics, (from διουρησις, a discharge of urine,) are medicines which, when taken internally, augment the flow of urine from the kidneys. *Diaphoretics*, (from διαφορεω, to carry through,) are medicines which, when taken internally, increase the discharge by the skin.

Diuretic Balls.

1.

℞	Castile soap,	
	Resin, āā	ʒiij.
	Nitre	ʒiv.
	Oil of juniper	ʒj.

Honey q. s. to make into a ball. (White.)

2.

℞	Camphor	ʒi.
	Nitre	℥ss.
	Castile soap	ʒiij.
	Oil of juniper	ʒj.

Mix, to make a ball. (White.)

3.

℞	Nitre	lbj.
	Castile soap	lbss.
	Common turpentine	lbj.
	Barley meal	lbiiss.

or sufficient to form a mass. (Bracy Clark.)

4.

℞	Common turpentine,	
	Soap,	
	Nitre, āā	lbss.

Barley or linseed meal, q. s. to form a mass.

Diuretic powders.

1.

℞	Yellow resin	lbj.
	Nitre	lbij.
	Cream of tartar	lbj.

Mix. ʒvj, ʒx, or ʒxii, in a mash. (Blaine.)

2.

℞	Nitre	ʒvj.
	Camphor	ʒiss.

Mix, for a dose. (White.)

Diuretic drinks.

1.

℞	Glauber's salts	℥ij.
	Nitre	ʒvj.
	Warm water	Oj.
	Sweet spirits of nitre	ʒj.

Mix, and give it with the horn. (Bracy Clark.)

2.

℞	Glauber's salts	℥iv.
	Nitre	℥ss.
	Sweet spirits of nitre	ʒij.
	Oil of juniper	ʒj.
	Thin gruel	Oj.

Mix, and give it with the horn.

Stimulating diaphoretic balls.

1.

℞	Emetic tartar	ʒiss.
	Camphor	ʒss.
	Ginger	ʒij.
	Opium	℈j.
	Oil of caraways	gtt.xv.

Honey q. s. to form a ball. (White.)

Veterinary medicines.

2.

℞ Antimonial powder . . ʒij.
Caraway powder . . ʒvj.
Ginger . . . ʒj.
Oil of aniseed . . gtt.xx.
Honey, q. s. to form a ball.
(White.)

Diaphoretic, or fever balls.

1.

℞ Camphor . . . ʒiss.
Nitre . . . ʒiv.
Calomel,
Opium, āā . . gr. xx.
Honey and linseed-meal, q. s. to form a ball. (White.)

2.

℞ Emetic tartar . . ʒiss.
Tragacanth powder . ʒij.
Syrup, q. s. to form a ball.
(White.)

3.

℞ Camphor . . . ʒij.
Nitre . . . ℥j.
Honey, q. s. to form a ball.
(White.)

TONICS AND ASTRINGENTS.

Tonics are medicines which restore the tension and vigour of the muscular fibre, when it has been weakened and relaxed. *Astringents* contract the animal fibre, and thus suppress excessive evacuations.

Tonic balls.

1.

℞ Peruvian bark . . ʒij.
Ginger . . . ʒss.
Conserve of roses, q. s. to form a ball.

2.

℞ Sulphate of iron . . ʒiij.
Salt of tartar . . ʒij.
Treacle and linseed-meal, q. s. to form a ball.

3.

℞ White arsenic . . gr. x.
Ginger . . . ʒj.
Powdered aniseed . . ℥ss.
Tragacanth powder . ʒij.
Syrup, q. s. to form a ball.
(White.)

Tonic drinks.

1.

℞ Sulphate of zinc . . ʒss.
Ginger or Pimento, powdered ʒj.
Treacle . . . ℥j.
Water . . . ℥xij.
Mix. To be given with the horn.
(Bracy Clark.)

2.

℞ Ægyptiacum . . ℥ss.
Pimento or Ginger . . ʒss.
Water, ℥xij, or enough to form a drink. (Bracy Clark.)

3.

℞ Quassia chips . . ℥ij.
Water . . . Oiij.
Boil till reduced to Oij. To be given in three drinks. (Bracy Clark.)

Astringent balls.

1.

℞ Opium . . . ʒj.
Ginger . . . ʒiss.
Chalk . . . ʒiss.
Honey, q. s. to form a ball.
For diarrhœa. (White.)

2.

℞ Catechu . . . ʒj.
Cinnamon . . . ʒj.
Linseed meal and Palm oil, sufficient to form a ball.
For diarrhœa, &c. (Morton.)

3.

℞ Kino . . . ʒij.
Cassia,
Ginger, āā. . . ʒj.
Treacle, q. s. to form a ball.
For diarrhœa, &c.

Veterinary medicines.

4.

℞	Oak bark	℥ss.
	Ginger	ʒj.
	Opium	ʒss.

Treacle, q. s. to form a ball.

For diabetes. (White.)

Astringent powder for nasal gleet.

℞	Powdered cantharides	℥ss.
	Sulphate of zinc	ʒij.
	Pimento powder	℥j.
	Barley or Oat-meal	℥iv.

Mix well together. A table-spoonful every morning. (Bracy Clark.)

Astringent drinks.

1.

℞	Glauber's salts	℥vj.
	Epsom salts	℥iij.
	Common salt	ʒss.
	Sulphate of iron	gr. v.

Dissolve in a quart of warm water, and divide into three drinks. For diarrhœa. (Bracy Clark.)

2.

℞	Powdered gum arabic	℥j.
	Prepared chalk	℥j.
	Laudanum	℥ss.
	Mint water	℥xij.

Mix.

3.

℞	Opium	ʒss.
	Ginger	ʒiij.
	Oak bark	℥j.
	Decoction of chamomile	Oj.

Mix.

For external application.

ASTRINGENTS AND ANTISEPTICS.

Astringents are used externally for diminishing discharges from wounds, &c. *Antiseptics* (from *αντί*, against, and *σήπω*, to putrefy) are medicines for preventing putrefaction.

Astringent powders.

1.

℞	Powdered alum	℥iv.
	Armenian bole	℥j.

Mix. (White.)

2.

℞	Sulphate of zinc, powdered	℥iv.
	Oxide of zinc	℥j.

Mix.

Astringent solutions.

1.

℞	Sulphate of zinc	℥iv.
	Water	Oj.

Dissolve.

For promoting the adhesion of living surfaces, in wounds, &c. (Bracy Clark.)

2.

℞	Alum	℥iv.
	Boiling water	Oj.

Dissolve.

For cracks in the skin, and grease chaps. (Bracy Clark.)

3.

℞	Sugar of lead	℥iv.
	Water	Oj.

Dissolve.

4.

℞	Tincture of muriate of iron	℥j.
	Water	℥iv.

Mix.

Astringent liniment.

Ægyptiacum, or Linimentum æruginis, is one of the most common and useful applications of this kind.

Astringent ointments

1.

℞	Venice turpentine	℥iv.
	Lard	℥vj.

Melt, and stir in sugar of lead ℥ij.

Make into an ointment. (White.)

2.

℞	Resin	lbss.
	Wax	℥iv.
	Lard	lbij.
	Verdigris	℥vj.

Melt the resin, wax, and lard, and stir in the verdigris until cold.

Hoof ointment.

℞	Tallow	lbiv.
	Bees' wax	℥iv.
	Tar	lbss.

Melt slowly over a fire, and stir them till cold. (Bracy Clark.)

Antiseptic fomentation.

℞ Decoction of marsh mallow	Oviij.
Sal ammoniac . .	℥iv.
Camphorated spirit .	℥vj.

Mix.

Antiseptic poultices.

1.

℞ Oatmeal . . .	lbss.
Linseed-meal . .	lbss.
Charcoal . . .	℥iv.
Yeast . . .	q. s.

(Blaine.)

2.

Carrots or turnips boiled and mashed into a poultice, to which charcoal may be added. (Blaine.)

3.

Linseed made into a poultice with boiling water, and ℥j or ℥ij. of oil of turpentine added to about lbij of the poultice.

CAUSTICS AND DETERGENTS.

Caustics, (from καίω, καυσω, to burn,) are substances which destroy the parts to which they are applied by chemically decomposing them. *Detergents*, (from *detergo*, to wipe away,) are substances which cleanse wounds, ulcers, &c., and excite healthy action in them.

Solid caustics.

The following are those most frequently used:—The hot iron (*actual cautery*), Lunar caustic, Fused potash, Sulphate of copper, Nitrate of copper, Corrosive sublimate, Quick-lime, and Red precipitate.

Liquid caustics.

1.

Butter of antimony (chloride of antimony).

2.

℞ Quicksilver . .	℥ss.
Nitric acid . .	℥j.

Dissolve with heat. (White.)

3.

℞ Corrosive sublimate .	℥ss.
Water, sufficient to dissolve it.	

(Blaine.)

4.

℞ Chloride of zinc . .	℥j.
Water . . .	℥iv.

Mix.

5.

℞ Verdigris . . .	℥j.
Acetic acid . .	℥ij.

Mix.

6.

℞ Sulphate of copper .	℥j.
Water . . .	℥vj.

Dissolve. (Morton.)

Detergent ointments.

1.

℞ Red precipitate . .	℥ij.
Lard . . .	℥iv.
Common turpentine .	℥vj.

Mix. (White.)

2.

℞ Verdigris . . .	℥ij.
Common turpentine .	℥iv.
Lard . . .	℥ij.

Mix.

Detergent liniment.

℞ Ægyptiacum . .	℥iij.
Tincture of myrrh .	℥j.

Mix.

Detergent lotion.

℞ Sulphate of zinc . .	℥j.
Water . . .	℥iv.

Mix. (White.)

DIGESTIVES AND DISCUTIENTS.

Digestives, (from *digero*, to dissolve,) are substances which, when applied to ulcers or wounds, induce or promote suppuration. *Discutients*, (from *discutio*, to shake in pieces,) are substances which possess the power of repelling or resolving tumours.

Veterinary medicines.

Digestive ointments.

1.

℞	Rosin	lbj.
	Linseed oil	℥xij.

Melt them over a fire, and stir till cold. (Bracy Clark.)

2.

℞	Common turpentine	℥iij.
	Bees' wax	℥ij.
	Lard	℥iv.

Melt them over a fire, and stir till cold. (White.)

3.

℞	Tar	lbij.
	Rosin	lbj.
	Lard	lbj.

Melt them over the fire, and stir till cold.

Discutient liniment.

℞	Mercurial ointment	℥ij.
	Camphor	℥ss.
	Oil of turpentine,	
	Oil of origanum, āā	f℥ss.

Mix.

Discutient ointment.

℞	Iodide of potassium	ʒj.
	Spirit of wine	fʒj.

Rub together, and add,

	Lard	℥j.
	Mercurial ointment	℥j.
	Camphor	ʒij.

Mix.

EMOLLIENTS.

Emollients, (from *emollio*, to soften,) are substances employed for softening and relaxing the living tissues.

Simple poultices are frequently used for this purpose; or marshmallow and elder ointments.

POISONS FOR VERMIN.

1.

℞	Tobacco	℥iv.
	Water	Oij.

Boil for a quarter of an hour, and then strain. To be used as a wash.

2.

℞	Corrosive sublimate	ʒij.
	Spirits of wine	℥ij.
	Water	Oij.

Mix, for a wash.

REFRIGERANTS.

Refrigerants, (from *refrigero*, to cool,) are applications for reducing the morbid heat of any part of the body.

1.

℞	Acetate of lead	ʒij.
	Vinegar	℥ij.
	Spirits of wine	℥ij.
	Water	Oij.

Mix, for a lotion.

2.

℞	Salammoniac	℥j.
	Vinegar	℥iv.
	Spirits of wine	℥ij.
	Water	Oiss.

Mix, for a lotion.

3.

℞	Spirit of mindererus	℥viij.
	Spirits of wine	℥iv.
	Spirit of camphor	℥ss.
	Water	Oij.

Mix, for a lotion.

4.

℞	Goulard's extract	ʒij.
	Spirits of wine	℥ss.
	Distilled water	Oij.

Mix, for a lotion.

TRAUMATICS.

Traumatics, (from τραυμα, a wound), are applications employed for promoting the healing of wounds.

1.

Tincture of aloes and myrrh. This is the most common application.

2.

℞	Sulphate of zinc	℥j.
	Water	℥vj.

Mix.

Veterinary medicines.

3.

℞ Sulphate of copper	℥j.
Water	℥vj.

Mix.

4.

Oil of tar has been recommended as a traumatic.

VESICANTS AND RUBEFACIENTS.

Vesicants, (from *vesico,* a bladder,) are applications for blistering the skin, and causing a discharge of serous fluid. *Rubefacients,* (from *rubefacio,* to make red,) are substances which, applied to the skin, produce redness without blistering.

Blistering ointments.

1.

℞ Powdered cantharides	℥iv.
Lard	lbij.
Oil of origanum	ʒij.

Mix. (Bracy Clark.)

2.

℞ Powdered cantharides	℥iv.
Spirit of turpentine	℥iij.
Powdered euphorbium	ʒij.
Lard	lbij.
Oil of origanum	ʒij.

Mix. (Bracy Clark.)

3.

℞ Powdered cantharides	℥ij.
Common turpentine	℥ij.
Lard	℥viij.

Mix. (Morton.)

4.

℞ Common resin	ʒvj.
Linseed oil	lbss.

Dissolve, and add,

Powdered cantharides	ʒvj.
Lard	℥xij.
Oil of origanum	ʒij.

Mix. (Bracy Clark.)

5.

℞ Powdered cantharides	℥j.
„ euphorbium	℥iss.
Corrosive sublimate	ʒj.
Oil of origanum	ʒij.
Lard	℥viij.

Mix.

Blistering liniments, or Liquid blisters.

1.

℞ Powdered cantharides	lbss.
Oil of turpentine	Oiv.
Olive oil	Oij.

Macerate the cantharides in the oil of turpentine for a week; then strain it, and add the olive oil to the strained liquor.

2.

℞ Powdered cantharides	℥ij.
Flour of mustard	℥ij.
Oil of turpentine,	
Olive oil, āā	℥viij.

Mix together.

Rubefacient liniments.

1.

℞ Olive oil	℥iv.
Solution of ammonia	℥j.

Mix. (Bracy Clark.)

2.

℞ Olive oil	℥iij.
Camphor	ʒiij.
Oil of turpentine	℥ss.
Solution of ammonia	ʒiij.

Mix.

3.

℞ Oil of bays	℥j.
Soft soap	℥ij.
Solution of ammonia	℥iss.
Spirits of camphor	℥ij.
Oil of origanum	ʒij.

Mix.

4.

℞ Soft soap	℥ij.
Camphor	℥j.
Oil of turpentine	℥iv.
Oil of origanum	ʒij.

Mix.

Veterinary medicines.

Embrocation for sprains.

Egg oils.

℞	Common vinegar	Oiss.
	Oil of turpentine	ʒiss.
	Spirits of wine	℥iss.
	Goulard's extract	℥ss.

The white and yolk of 2 eggs.

Mix the oil of turpentine and Goulard's extract with the eggs, then add the vinegar gradually, and lastly the spirit of wine.

MEERSCHAUM, (German for *sea-froth.*)

A white, or greyish-green mineral, soft and dry to the touch, and adhering to the tongue. It consists, according to Klaproth, of Silica 41·5; Magnesia 18·25; Water and Carbonic acid 39. It is found in Greece, Turkey, and other parts. When dug up it is soft, greasy, and lathers like soap, and is therefore used by the Tartars in washing linen. The principal consumption of it, however, is in the manufacture of tobacco-pipes.

MEL. *Honey.*

A saccharine substance elaborated by bees from the sweet juices of the nectaries of flowers, and deposited by them in waxen cells called the honey-comb. It consists of crystallizable and uncrystallizable grape sugar, with some aromatic substance which gives it a peculiar flavour. This flavour differs according to the sources from whence the honey has been obtained by the bees; thus, *Narbonne honey* derives its flavour from the rosemary and other labiate flowers, on which the bees producing it feed.

MEL PREPARATUM. *Prepared honey.*

U. S. Ph. 1840.

℞	Clarified honey	Oss.
	Diluted alcohol	Oj.
	Prepared chalk	℥ss.

Having mixed the honey and diluted alcohol, add the prepared chalk, and allow the mixture to stand, occasionally stirring it. Then heat it to ebullition, filter, and by means of a water-bath evaporate the clear liquor so that when cold it may have the sp. gr. of 1·32.

MEL DESPUMATUM. *Clarified honey.*

Dubl. Ph. 1836.

Melt the honey in a water-bath, and remove the scum.

MEL BORACIS. *Honey of borax.*

Lond. Ph. 1836, Edin. Ph. 1841, and Dubl. Ph. 1826.

℞	Borax, powdered	ʒj.
	Honey, despumated	℥j. Mix.

Med. use. Detergent in aphthous affections of the tongue and fauces.

Mel rosæ. *Honey of rose.*

Lond. Ph. 1836.

℞ Red rose, (petals), dried	℥iv.
Water, boiling	Oiiss.
Honey, despumated	lbv.

Macerate the rose-petals in the water for six hours; then add the honey to the strained liquor, and boil down, in a water-bath, to a proper consistence.

Edin. Ph. 1841.

℞ Dried petals of rosa gallica	℥iv.
Boiling water	Oiiss.
Honey	lbv.

Infuse the petals in the water for six hours; strain and squeeze; let the impurities subside; pour off the clear liquor; mix the honey with it; and evaporate the whole in the vapour-bath to the consistence of syrup, removing the scum which forms.

Dubl. Ph. 1826.

℞ Petals of the red rose-buds, dried and freed from their claws	℥iv.
Boiling water	Oiij.
Honey, *by weight*	lbv.

Macerate the petals in water for six hours; mix the honey with the liquor previously filtered, and boil it down to the consistence of a syrup, removing the scum.

Med. use. As an adjunct to detergent gargles.

Mellago.

Any medicine having the consistence and sweetness of honey.

Mellago taraxaci.

This term has been applied to fluid extract of dandelion.

Metheglin.

A wine made from honey in the following manner:—Put one hundred weight of honey into a thirty-two gallon cask, and fill it up with boiling water; stir them well together for a day or two, then add yeast, and ferment it. The honey is sometimes boiled with the water for an hour or two, and about an ounce of hops added, previous to the fermentation.

Microcosmic salt. (From μικρος, little, and κοσμος, order.)

A double salt, obtained by mixing equal parts of phosphate of soda and phosphate of ammonia, in solution, and evaporating it to crystallization. It is much used as a flux in experiments with the blow-pipe.

Mistura acaciæ. *Mixture of acacia.*

Lond. Ph. 1836.

℞ Acacia, powdered	℥x.
Water, boiling	Oj.

Rub the acacia with the water gradually poured in, and dissolve it.

Edin. Ph. 1841. *Mucilago.*

℞ Gum arabic	℥ix.
Water, cold	Oj.

Mix them, allow the gum to dissolve without applying heat, but with occasional stirring; then strain through linen or calico.

Dubl. Ph. 1826. *Mucilago gummi arabici.*

℞	Gum arabic, reduced to coarse powder	℥iv.
	Hot water, *by measure*	℥iv.

Digest, shaking frequently, that the gum may be dissolved, then strain the mucilage through linen.

Med. use. Demulcent. A useful adjunct to cough mixtures; also useful in irritation of the urinary organs. *Dose,* f℥ss to f℥j.

MISTURA ALTHEÆ. *Mixture of marshmallow.*

Edin. Ph. 1841.

℞	Althæa-root, dried	℥iv.
	Raisins, freed of the seeds	℥ij.
	Boiling water	Ov.

Boil down to three pints; strain through linen or calico, and when the sediment has subsided, pour off the clear liquor for use.

Med. use. Emollient. Used in the various species of mucous inflammation.

MISTURA AMYGDALÆ. *Mixture of almond.*

Lond. Ph. 1836.

℞	Confection of almond	℥iiss.
	Distilled water	Oj.

Add the water to the confection of almond, gradually, while rubbing them, until they are mixed; afterwards strain through linen.

Edin. Ph. 1841. *Mistura amygdalarum.*

℞	Conserve of almonds	℥ij.
	Water	Oij.

Add the water gradually to the confection, triturating constantly, and then strain through linen or calico.

Or,

℞	Sweet almonds	℥j ʒij.
	Pure sugar	ʒv.
	Mucilage	f℥ss.
	Water	Oij.

Steep the almonds in hot water and peel them; and proceed as for the Mistura acaciæ.

Dubl. Ph. 1826.

℞	Sweet almonds, blanched	℥iss.
	Bitter almonds	℈ij.
	Refined sugar	℥ss.
	Water	Oiiss.

Rub the almonds with the sugar, adding gradually the water, then strain.

Edin. Ph. 1841. *Mistura acaciæ.*

℞	Mucilage	f℥iij.
	Sweet almonds	ʒx.
	Pure sugar	ʒv.
	Water	Oij.

Steep the almonds in hot water, and peel them: beat them to a smooth pulp in an earthenware or marble mortar, first with the sugar and then with the mucilage; add the water gradually, stirring constantly; strain through linen or calico.

Dubl. Ph. 1826. *Emulsio arabica.*

℞	Gum arabic, in powder	ʒij.
	Sweet almonds, blanched,	
	Purified sugar, āā	℥ss.
	Water, *by measure*	℥xvj.

Dissolve the gum in the water heated, and when it is almost cold, pour it gradually upon the almonds previously beaten to a paste with the sugar, triturating at the same time so as to form a milky mixture; then strain.

Med. use. These preparations are demulcent, and useful in inflammatory fevers, and affections of the urinary organs. *Dose,* from f℥iij to f℥vj, or even more.

MISTURA AMMONIACI. *Mixture of ammoniacum.*

Lond. Ph. 1836.

℞	Ammoniacum . . .	ʒv.
	Water	Oj.

Rub the ammoniacum with the water, gradually poured in, until they are perfectly mixed.

Dubl. Ph. 1826.

℞	Gum ammoniacum . .	ʒj.
	Pennyroyal water, *by measure*	℥viij.

Triturate the gum with the pennyroyal water, gradually poured on, until the mixture assumes the appearance of milk; it should then be strained through linen.

MISTURA APERIENS ABERNETHEI. *Abernethy's aperient mixture.*

℞	Sulphate of magnesia . . .	ʒiv.
	Manna	ʒij.
	Infusion of senna . . .	f℥vj.
	Tincture of senna . . .	f℥ij.
	Mint water	f℥j.
	Distilled water	f℥ij. Mix.

MISTURA ASSAFŒTIDÆ. *Mixture of assafœtida.*

Lond. Ph. 1836.

℞	Assafœtida	ʒv.
	Water	Oj.

Rub the assafœtida with the water, gradually poured in, until they are perfectly mixed.

Dubl. Ph. 1826.

℞	Assafœtida . . .	ʒj.
	Pennyroyal water, *by measure*	℥viij.

Triturate the assafœtida with the water poured on gradually, until an emulsion is made.

Med. use. Chiefly as an enema in hysteric paroxysms, also in the convulsions of children.

MISTURA CAMPHORÆ. *Camphor mixture.*

Lond. Ph. 1836.

℞	Camphor . . .	ʒss.
	Rectified spirit . .	♏x.
	Water	1 pint.

First rub the camphor with the spirit, then with the water, gradually poured in, and strain through linen.

Edin. Ph. 1841.

℞	Camphor	℈j.
	Sweet almonds,	
	Pure sugar, āā . . .	℥ss.
	Water	Oj.

Steep the almonds in hot water and peel them; rub the camphor and sugar well together in a mortar; add the almonds; beat the whole into a smooth pulp; add the water gradually, with constant stirring, and then strain.

Dubl. Ph. 1826.

℞	Camphor	℈j.
	Rectified spirit	♏x.
	Refined sugar	℥ss.
	Hot water	Oj.

First triturate the camphor with the spirit, then with the sugar; lastly, add the water during the trituration, and filter the mixture through bibulous paper.

Med. use. Employed as a vehicle for more active medicines in low states of the system, and for antispasmodics in nervous and hysteric affections. *Dose*, from f℥ss to f℥ij.

MISTURA CAMPHORÆ CUM MAGNESIA. *Camphor mixture with magnesia.*

Edin. Ph. 1841.

℞	Camphor	gr. x.
	Carbonate of magnesia	gr. xxv.
	Water	f℥vi.

Triturate the camphor and carbonate of magnesia together, adding the water gradually.

Dubl. Ph. 1826.

℞	Camphor	gr. xij.
	Carbonate of magnesia	ʒss.
	Water	℥vj.

Triturate the camphor with the magnesia, adding the water gradually, and mix.

Med. use. The same as of Mistura camphoræ. Besides this, however, this preparation has been found beneficial in cases of uric acid diathesis. *Dose*, f℥ss to f℥j.

MISTURA CASCARILLÆ COMPOSITA. *Compound mixture of cascarilla.*

Lond. Ph. 1836.

℞	Infusion of cascarilla	f℥xvij.
	Vinegar of squill	f℥j.
	Compound tincture of camphor	f℥ij. Mix.

Med. use. Employed with advantage in chronic affections of the lungs. *Dose*, from f℥j to f℥iss occasionally.

MISTURA CATHARTICA. *Mistura sennæ composita. Cathartic mixture. Black draught.*

℞	Sulphate of magnesia	℥vj.
	Spirit of sal volatile	ʒvj.
	Tincture of senna	℥iij.
	Infusion of senna	℥xviij.
	Extract of liquorice	ʒvj.
	Oil of cloves	gtt. vj.

Dissolve the sulphate of magnesia and extract of liquorice with heat, in the infusion of senna, and then add the other ingredients.

Dose. From f℥iss to f℥ij for adults.

MISTURA CREASOTI. *Mixture of creasote.*

Edin. Ph. 1841.

℞ Creasote,	
Acetic acid, āā	♏xvj.
Compound spirit of juniper,	
Syrup, āā	f℥j.
Water	f℥xiv.

Mix the creasote with the acid, then gradually the water, and lasty the syrup and spirit.

Med. use. In those cases where creasote is indicated this has been found a convenient formula. *Dose,* f℥iss.

MISTURA CRETÆ. *Chalk mixture.*

Lond. Ph. 1836, and Dubl. Ph. 1826.

℞ Prepared chalk	℥ss.
Sugar	ʒiij.
Mixture of acacia	f℥iss.
Cinnamon water	f℥xviij.

Mix.

Edin. Ph. 1841.

℞ Prepared chalk	ʒx.
Pure sugar	ʒv.
Mucilage	f℥iij.
Spirit of cinnamon	℥ij.
Water	Oij.

Triturate the chalk, sugar, and mucilage together, and then add gradually the water and spirit of cinnamon.

Med. use. Antacid; in diarrhœa combined with acidity. *Dose,* f℥j. to f℥ij.

MISTURA FERRI COMPOSITA. *Compound mixture of iron.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Myrrh, powdered	ʒij.
Carbonate of potash	ʒj.
Rose water	f℥xviij.
Sulphate of iron, powdered	℈ijss.
Spirit of nutmeg	f℥j.
Sugar	ʒij.

Rub together the myrrh with the spirit of nutmeg and the carbonate of potash, and to these, while rubbing, add first the rose water with the sugar, then the sulphate of iron. Put the mixture immediately into a proper glass vessel and stop it.

Dubl. Ph. 1826.

℞ Myrrh, reduced to fine powder	ʒj.
Carbonate of potash	gr. xxv.
Rose water	℥vijss.
Sulphate of iron, reduced to powder	℈j.
Spirit of nutmeg	℥ss.
Refined sugar	ʒj.

Triturate together the myrrh, spirit of nutmeg, and carbonate of potash, and during the trituration add to them, first the rose water with the sugar, then the sulphate of iron. Pour the mixture immediately into a proper glass vessel and stop it up.

Med. use. In cases of hysteria and chlorosis, a most valuable tonic. *Dose,* f℥j to f℥ij.

MISTURA FERRI AROMATICA. *Aromatic mixture of iron.*

Dubl. Ph. 1826.

℞	Lance-leaved cinchona, reduced to coarse powder	℥j.
	Colomba root, sliced	ʒiij.
	Cloves, bruised	ʒij.
	Iron filings	℥ss.

Digest for three days in a closed vessel, shaking occasionally, with as much peppermint water as will be sufficient to afford 12 oz. of strained liquor, then add,

Compound tincture of cardamoms	℥iij.
Tincture of orange peel	ʒiij.

Med. use. Tonic, and valuable in various states of debility. This preparation was formerly known by the name of *Heberden's ink,* from its black colour. *Dose,* f℥ss to f℥ij.

MISTURA GENTIANÆ COMPOSITA. *Compound mixture of gentian.*

Lond. Ph. 1836.

℞	Compound infusion of gentian	f℥xij.
	Compound infusion of senna	f℥vj.
	Compound tincture of cardamom	f℥ij. Mix.

Med. use. Tonic and purgative. *Dose,* f℥j to f℥ij.

MISTURA GUAIACI. *Mixture of guaiacum.*

Lond. Ph. 1836.

℞	Guaiacum resin	ʒiij.
	Sugar	℥ss.
	Mixture of acacia	f℥ss.
	Cinnamon water	f℥xix.

Rub the guaiacum with the sugar, then with the mixture of acacia, and to these, while rubbing, add gradually the cinnamon water.

Edin. Ph. 1841.

The same as the London, except that in the Edinburgh formula 19½ fluidounces of cinnamon water are ordered.

Med. use. A stimulating diaphoretic. *Dose,* f℥ss to f℥ij, two or three times a day.

MISTURA HORDEI. *Mixture of barley.*

Edin. Ph. 1841.

℞	Pearl barley,	
	Figs, sliced,	
	Raisins, freed of the seeds, āā	℥ijss.
	Liquorice root, sliced and bruised	ʒv.
	Water	Ovss.

Clean the barley, if necessary, by washing it with cold water; boil it with 4½ pints of the water down to two pints; add the figs, raisins, and liquorice root, with the remaining pint of water; and again boil down to two pints; then strain.

Med. use. An agreeable drink in febrile affections.

MISTURA MOSCHI. *Mixture of musk.*

Lond. Ph. 1836.

℞ Musk,	
Acacia, powdered,	
Sugar, āā	ʒiij.
Rose water	Oj.

Rub the musk with the sugar, then with the acacia, the rose water being gradually poured in.

MISTURA SALINA. *Saline mixture.*

1.

℞ Fresh lemon juice	f℥ij.
Carbonate of potash	gr. lxxvj. or q. s.
Distilled water	f℥ij.

Neutralize the lemon juice with the carbonate of potash, and add the distilled water.

2.

℞ Citric acid	ʒj.
Carbonate of potash	gr. lxxvj.
Distilled water	℥iv.

Mix.

Med. use. Antispasmodic. *Dose,* f℥j to f℥ij.

MISTURA SCAMMONII. *Mixture of scammony.*

Edin. Ph. 1841.

℞ Resin of scammony	gr. vij.
Unskimmed milk	f℥iij.

Triturate the resin with a little of the milk and gradually with the rest of it, till a uniform emulsion is formed.

MISTURA SPIRITUS VINI GALLICI. *Mixture of spirit of French wine.*

Lond. Ph. 1836.

℞ Spirit of French wine [brandy]	
Cinnamon water, āā	f℥iv.
The yolks of 2 eggs.	
Purified sugar	℥ss.
Oil of cinnamon	♏ij. Mix.

Med. use. Stimulant and restorative. Given in the sinking state of low fever. *Dose,* f℥ss to f℥ij.

MOIREE METALLIQUE,

Commonly called crystallized tin-plate, is produced by applying nitro-muriatic acid for a few seconds to the surface of tin-plate, previously heated, then washing off the acid with water, drying the plate and coating it with lacquer.

MOLASSES,

Is the brown, viscid, uncrystallizable liquor which drains from the sugar in the colonies. In this country treacle is generally sold for it.

MONESIA.

A brown astringent extract, said to be made from the bark of the *Chrysophillum Buranheim*, a native of the Brazils, where the monesia is made. It is much esteemed by the Brazilians as an astringent.

MORPHIA.

The narcotic principle of opium.

Lond. Ph. 1836.

℞	Hydrochlorate of morphia	℥j.
	Solution of ammonia	fʒv.
	Distilled water	Oj.

Add the hydrochlorate of morphia, previously dissolved in a pint of water, to the solution of ammonia, with an ounce of distilled water, shaking them together. That which is thrown down wash with distilled water and dry with a gentle heat.

Note.—It is very little soluble in cold water, a little in hot water, but it is very readily dissolved in alcohol. This solution manifests alkaline properties, when tested with turmeric; and when the spirit has been distilled from it, it forms crystals, which are entirely destroyed by fire. On nitric acid being added, it becomes red first and then yellow. Tincture of sesquichloride of iron occasions a blue colour. Chlorine, ammonia being added, imparts to its salts a brown colour, which disappears when you have added more chlorine. Morphia is also precipitated from its salts by solution of potash, the addition of which in excess redissolves it.

Use. For the preparation of *Morphiæ acetas.*

MORPHIÆ ACETAS. *Acetate of morphia.*

Lond. Ph. 1836.

℞	Morphia	ʒvj.
	Acetic acid	fʒiij.
	Distilled water	f℥iv.

Mix the acid with the water and pour it on the morphia to saturation. Let the liquor evaporate by a gentle heat so that crystals may form.

Note.—It is very readily dissolved in water. In its other properties it closely resembles morphia.

Edin. Ph. 1841.

Take of muriate of morphia any convenient quantity. Dissolve it in 14 times its weight of warm water, and, when the solution is cool, add aqua ammoniæ gradually, and with constant agitation, until there is a permanent but faint odour of ammonia in the fluid. Collect the precipitate on a calico filter, wash it moderately with cold water, and dissolve it by means of a slight excess of pyroligneous acid in 12 parts of warm water for every part of muriate of morphia that was used. Concentrate the solution over the vapour bath, and set it aside to crystallize. Drain and squeeze the crystals, and dry them with a gentle heat. More acetate of morphia may be obtained on concentrating the mother liquor.

Note.—One hundred measures of a solution of 10 grains in half a fluidounce of water and five minims of acetic acid, heated near to 212° and decomposed by a faint excess of ammonia, yield by agitation a precipitate which, in twenty-four hours, occupies 15·5 measures of the liquid.

Med. uses. *Dose*, from gr. $\frac{1}{8}$ to gr. $\frac{1}{4}$. The advantage of this preparation over opium is that it occasions neither headache, nor sickness.

MORPHIÆ HYDROCHLORAS. *Hydrochlorate of morphia.*

Lond. Ph. 1836.

℞	Opium, sliced . .	lbj.
	Crystals of chloride of lead . . .	℥ii. or q. s.
	Purified animal charcoal	℥iijss.
	Hydrochloric acid,	
	Distilled water,	
	Solution of ammonia, āā	q. s.

Macerate the opium in 4 pints of distilled water for thirty hours, and bruise; then, after it has been disgested for twenty hours more, press. That which remains, macerate again and a third time in water, so that it may be free from taste, and bruise and press it the same number of times. Evaporate the mixed liquors with the heat of 140° to the consistence of a syrup. Then add 3 pints of distilled water, and when all the impurities have subsided, pour off the supernatant liquor. To this add gradually 2 ounces of chloride of lead previously dissolved in 4 pints of boiling distilled water, or a sufficient quantity, till nothing more is thrown down. Pour off the liquor, and wash what remains by the frequent affusion of distilled water. Then evaporate the liquors when mixed together by a gentle heat, as before, and set aside that crystals may form. Press these in a linen cloth, then dissolve them in a pint of distilled water, and digest with 1½ ounce of animal charcoal, with a heat of 120°, then strain. Lastly, the charcoal being washed away, cautiously evaporate the liquors, that pure crystals

Edinb. Ph. 1841. *Morphiæ murias.*

℞	Opium . . .	℥xx.
	Water . . .	Oviij.
	Muriate of lime . .	℥j., or a slight excess.

Macerate the opium in fragments for twenty-four hours in two pints of water; and separate the infusion, squeezing well the residue. Repeat the maceration successively with two pints more of the water till the whole is made use of. Concentrate the whole infusions over a vapour-bath to one pint, and add the muriate of lime dissolved in four fluidounces of water. Set the whole aside to settle; pour off the liquid; wash the sediment with a little water, adding the washings to the liquid. Evaporate the liquid sufficiently in the vapour-bath for it to solidify on cooling. Subject the cooled mass to very strong pressure in a cloth; re-dissolve the cake in a sufficiency of warm distilled water; add a little fine powder of white marble, and filter; acidulate the filtered fluid with a very little muriatic acid; and concentrate a second time in the vapour-bath for crystallization. Subject the crystals again to very strong pressure in a cloth. Repeat the process of solution, clarification by marble and muriatic acid, concentration, and crystallization, until a snow-white mass be obtained.

On the small scale, trouble and loss are saved by decolourizing the solution may be obtained. Into the decanted liquor, from which the crystals were separated in the first instance, a pint of water being first added, gradually drop, occasionally shaking it, as much solution of ammonia as may suffice to throw down all the morphia. To this, when washed with distilled water, add hydrochloric acid, that it may be saturated; then digest with 2 ounces of animal charcoal, and strain. Lastly, the charcoal being thoroughly washed, evaporate the liquors cautiously, that pure crystals may be obtained.

Note.—Soluble in water. What is precipitated from the solution by nitrate of silver is not totally dissolved either by ammonia, unless added in excess, or by hydrochloric or nitric acid.

of muriate of morphia by means of a little purified animal charcoal after two crystallizations. But on the large scale it is better to purify the salt by repeated crystallizations alone, and to treat all the expressed fluids, except the first, in the same way with the original solution, of impure muriate of morphia. An additional quantity of salt may often be got from the first dark and resinous fluid obtained by expression, on merely allowing it to remain at rest for a few months, when a little muriate of morphia may be deposited in an impure condition.

The opium, which yields the largest quantity of precipitate by carbonate of soda, yields muriate of morphia not only in greatest proportion, but likewise with the fewest crystallizations.

Note.—Snow-white; entirely soluble; solution colourless; loss of weight at 212° not above 13 per cent; 100 measures of a solution of 10 grains in half a fluidounce of water, heated near to 212°, and decomposed with agitation by a faint excess of ammonia, yield a precipitate which in 24 hours occupies 12·5 measures of the liquid.

Med. uses. The hydrochlorate is preferable to the acetate of morphia, as not being so subject to decomposition.

MORPHIÆ SULPHAS. *Sulphate of morphia.*

U. S. Ph. 1840.

℞ Morphia, in powder . . .
Distilled water . . . O
Diluted sulphuric acid, a sufficient quantity.

Mix the morphia with the water, then carefully drop in the acid, constantly stirring till the morphia is saturated and dissolved. Evaporate the solution by means of a water-bath, so that it may crystallize on cooling. Dry the crystals on bibulous paper.

MOSCHUS ARTIFICIALIS. *Oleum succini oxidatum. Artificial musk. Oxidized oil of amber. Resin of amber.*

Add gradually f℥iij of nitric acid to f℥j of oil of amber; let them stand for twenty-four hours, and wash the resinous substance which will be formed with water.

MOXA.

A small combustible body, employed for producing *actual cautery.* Moxas have been applied as counter-irritants in cases of gout, rheumatism, &c. They are usually made in the form of small cones or short cylinders, which are placed on the skin, ignited, and allowed to burn to the base.

Chinese moxas. Prepared from the downy portion of the leaves of *Artemisia sinensis.*

European moxas. Usually made of carded cotton soaked in solution of nitrate or chlorate of potash. The pith of the elder-tree or the sun-flower is sometimes used.

MUCILAGO AMYLI. *Mucilage of starch.*

Edin. Ph. 1841.

℞	Starch . . .	℥ss.
	Water . . .	Oj.

Triturate the starch with a little of the water; add the rest of the water gradually; then boil for a few minutes.

Dubl. Ph. 1826.

℞	Starch . . .	ʒvj.
	Water . . .	Oj.

Triturate the starch, gradually adding the water; then boil for a short time.

Med. use. As a vehicle for more active medicines in the form of enema.

MUCILAGO TRAGACANTHÆ. *Mucilage of tragacanth.*

Edin. Ph. 1841.

℞	Tragacanth . .	ʒij.
	Boiling water . .	f℥ix.

Macerate for twenty-four hours, then triturate to dissolve the gum, and express through linen or calico.

Dubl. Ph. 1826.

℞	Gum tragacanth, in powder	ʒij.
	Water, *by measure* . .	℥viij.

Macerate in a close vessel until the gum is dissolved; then strain the mucilage through linen.

Med. use. The same as that of the mixture of acacia.

MUSTARD. *Flour of mustard.*

The powdered seeds of the white and black mustard, from which the husks are separated by sifting. The flour of mustard of commerce generally contains wheat flour and cayenne pepper, and is coloured with turmeric.

Mustard, ready made, for the use of the table.

1.

℞	Common salt . .	lbiss.
	Scraped horseradish .	lbj.
	Garlic . .	2 cloves
	Boiling vinegar .	cong. ij.

Macerate for twenty-four hours, then strain, and add.

Flour of mustard q. s. to make it of the proper consistence.

2.

℞	Flour of mustard .	lbij.
	Common salt . .	lbj.

Vinegar, sufficient to make it of the proper consistence.

3.

℞	Flour of mustard .	lbij.
	Common salt . .	lbj.
	Tarragon vinegar .	Oss.

Best vinegar, sufficient to make it of the proper consistence.

NAPHTHA.
This term was originally applied to a species of hydrocarbon, which exudes from the ground in certain localities in Persia, Italy, &c. Barbadoes tar is a variety of this kind of naphtha, to which the term petroleum is frequently applied. The term naphtha, however, is now commonly applied to pyroxylic and pyroacetic spirits. These two last-named substances have been prescribed under the name of naphtha, in cases of incipient phthisis, by Dr. Hastings.

NAPHTHALINE.
A white crystallizable volatile substance obtained in the distillation of coal-tar.

NARCOTINE.
One of the proximate constituents of opium.

NECKLACES. *Anodyne necklaces.*
Are formed of the roots of the henbane, of Job's tears, of allspice steeped in brandy, of jumble-beads, or o felks' hoofs, cut and strung to suit the fancy of the quacks who sell, or of the credulous or superstitious persons who use them. They were supposed to procure easy dentition in children, and sleep to persons affected with fever, but they are now gone almost out of use.

NESTS. *Edible birds'-nests.*
The nests of a species of swallow inhabiting the Indian Archipelago; these nests are formed of a mucous slime secreted in the stomachs of these birds, and thrown up for assisting in building their nests. They are added to soup to render it thick, the feathers being separated by straining.

NICKEL. *Symb.* Ni. *eq.* 28.
A hard, malleable, greyish-white metal. It occurs chiefly in combination with arsenic, and associated with iron and cobalt. It is not used in medicine; its chief consumption is in the manufacture of *German*, or *Nickel silver*, which is an alloy of copper, zinc, and nickel.

NICOTINE. *Symb.* $C^{10}H^{8}N$.
An alkaloid, liquid and highly poisonous, which is obtained by distilling tobacco with caustic potash.

NOVARGENT.
Preparations are sold under this name for re-silvering plated articles from which the silver has been worn off, and for coating copper and other metals with silver. They consist of solutions of oxide of silver in solution of hyposulphite of soda, or cyanide of potassium. Sometimes the solutions thus formed are mixed with prepared chalk and sold in the form of powder. The solution is rubbed over the metal to be coated

with a little chalk; the powder is moistened with water or spirit, and then used in like manner.

Noyaux.

A liqueur made with bitter almonds, from which it acquires its peculiar flavour.

1.

℞ Bitter almonds, blanched	℥iv.
Proof spirit, or Gin .	Oij.
White sugar . .	℥xij.

Macerate for a fortnight, and strain.

2.

℞ Peach or apricot kernels with the shells, bruised	No. 120
Proof spirit . .	Oij.
White sugar . .	℥xij.

Macerate for a fortnight, and strain.

3.

℞ Bitter almonds . .	℥iv.
Coriander seeds . .	ʒij.
Cinnamon, Mace, āā . .	ʒj.
Proof spirit, or Gin .	Oiv.
White sugar . .	℥xxiv.

Macerate for a fortnight, and strain.

Oleum absinthii. *Oil of wormwood.*

Obtained by distillation from *Artemisia absinthium.* Stomachic. Sp. gr. 0·972. (Pereira.) 100lb. fresh herb yield 2 ounces of the oil. (Raybaud.) 100lb. dry herb, recent, yield 16 ounces. (Martius.) 100lb. dry herb, one year old, yield 8·75 ounces. (Bley.)

Oleum acori. *Oleum calami aromatici. Oil of sweet flag.*

Obtained by distillation from the rhizome of *Acorus calamus.* Sweet scented. 100lbs. of the fresh rhizome yielded 16 ounces. (Martius.)

Oleum æthereum. *Ethereal oil.*

Lond. Ph. 1836.

℞ Rectified spirit . .	lbij.
Sulphuric acid . .	lbiv.
Solution of potash, Distilled water, āā . .	f℥j. or q. s.

Mix the acid cautiously with the spirit. Let the liquor distil until a black froth arises; then immediately remove the retort from the fire. Separate the lighter supernatant liquor from the heavier one, and expose the former to the air for a day. Add it to the solution of potash first mixed with the water, and shake them together. Lastly, when sufficiently washed, separate the ethereal oil which shall have subsided.

Note.—It has a peculiar, very slightly acrid odour; it is entirely soluble in sulphuric æther, and exercises no acid power on litmus. Its specific gravity is 1·05.

Oleum aloeticum. *Oil of aloes.* (Van Mons.)

℞ Socotrine aloes, any quantity.

Distil it till only a carbonaceous mass remains in the retort, and collect the oil which passes over into the receiver.

Under the name of *Batavian aloetic oil,* Cadet de Gassicourt prescribes this formula:—

℞ Oil of olives . .	lbj.
Hepatic aloes, in powder, Myrrh, āā . .	℥ij.
Olibanum . .	℥ss.

Distil from a sand-bath, in a stone retort.

The product of this operation always contains a greater or less quantity of empyreumatic oil.

The oil of aloes has been praised as a vermifuge for children; it is rubbed twice or thrice a day upon the umbilical region.

OLEUM AMYGDALÆ. *Oil of almonds. Oil of sweet almonds.*

Obtained by expression from bitter or sweet almonds, usually the former. Its specific gravity appears to vary; Brandes found it to be 0·911; Brisson, 0·917; Saussure, 0·920 at 50° Fahr. The average produce is from 48 to 52lbs. from 1 cwt. of almonds. (Pereira.)

OLEUM AMYGDALÆ AMARÆ. *Oil of bitter almonds. Essential oil of almonds.*

Obtained by submitting bitter almond cake (left after the expression of the fixed oil from bitter almonds) to distillation with water, either alone or more usually with salt, previously leaving the cake to soak in the water for a day or more. 25 lbs. of cake yield 2 oz. of oil. It is used to communicate flavour to confectionery, &c., but should be cautiously employed, as it is highly poisonous, owing to the presence of hydrocyanic acid. The specific gravity of a sample which had been prepared eight months was 1·0836. (Pereira.)

OLEUM ANETHI. *Oil of dill.*

Obtained by submitting the bruised fruit of dill (*Anethum graveolens*) with water to distillation. Two cwts. of the fruit yield 8 lbs. 5 oz. of oil. It is of a pale yellow colour. Its specific gravity is 0·881. Its odour is peculiar and penetrating, analogous to that of the fruit. Its taste is hot but sweetish. According to Sietzmann, 1440 parts of water dissolve one part of this oil.

OLEUM ANIMALE EMPYREUMATICUM. *Oleum cornu cervi. Animal oil. Dippel's oil. Rectified oil of hartshorn.*

From oil of hartshorn by a slow distillation, in a small retort, saving only the first portion that comes over. It is at first limpid and colourless, but unless secluded from light it soon becomes discoloured, and should therefore be kept in opaque vessels. It is antispasmodic, anodyne, and diaphoretic in small doses, from 10 to 30 drops in water. In large doses it acts as an energetic poison; externally, it is irritant.

OLEUM ANISI. *Oil of aniseed.*

Obtained by submitting the fruit of *Pimpinella anisum*, with water, to distillation. Mr. Brande says, that from 1 cwt. of fruit, about two pounds of oil are obtained. The greater part of the oil used in this country is imported from Germany and the East Indies. When carefully prepared it is transparent and nearly colourless, having a slightly yellow tinge. Its specific gravity increases with its age. According to Martius, when freshly distilled, its specific gravity was 0.979. but after keeping it for a year and a half it had increased to 0.9853. It congeals at 50° Fah.,and does not liquefy again under 62°. Spermaceti, which is said to be sometimes added to oil of anise to promote its solidification, may be detected by its insolubility in cold alcohol, the oil being soluble in all proportions.

OLEUM ANISI STELLATI. *Oleum badiani. Oil of star-anise (Illicium anisatum).*

Has the odour and taste of the oil of aniseeds, but it preserves its fluidity at 35°.6 F. It is said to be sometimes substituted for the *oleum anisi*.

OLEUM ANTHEMIDIS. *Oleum chamæmeli. Oil of chamomile.*

Obtained by distillation from the flowers and herb of *Anthemis nobilis*. When first drawn it is usually of a green colour, but on exposure to the light and air becomes yellowish brown. There is, however, a variety of chamomile which yields a bright blue oil, and which is not so liable to change colour as the other. 100

lbs. of the flowers, when recently dried, yield 5.83 ounces, but when kept twelve months, only 3 ounces of oil.

OLEUM ANAMIRTÆ COCCULI. *Oil of cocculus indicus.*

Obtained by digesting the seeds in rectified spirit and evaporating the tincture, when the oil collects on the surface; it has a bright green colour, and contains *picrotoxin*, the active principle of the seeds.

OLEUM ARMORACIÆ. *Oil of horseradish.*

Obtained by distillation with water from the fresh root of *Cochlearia armoracia.* It is pale yellow; heavier than water, and very volatile. Its odour is exceedingly powerful, and like that of horseradish, one drop is sufficient to infect a whole room. Its taste is at first sweetish, then burning and acrid. It causes inflammation and vesication when applied to the skin. It is slightly soluble in water, easily so in alcohol. 100 lbs. of the fresh root yield 0·9 oz. of oil. (Raybaud.)

OLEUM ASARI. *Liquid volatile oil of asarabacca.*

Obtained by submitting the root of *Asarum europæum* to distillation, with water, when three volatile oily matters are obtained, two of which are solid. The liquid oil is yellow, glutinous, lighter than water, and has an acrid, burning taste, and a penetrating odour like that of valerian. It is slightly soluble in water, more so in alcohol, ether, and the oils (volatile and fixed). Its constituents are $C^9 H^4 O$. (Pereira.)

OLEUM ASPHALTI. *Oil of asphaltum.*

Plenck's Pharm.

1.

℞ Asphaltum, any quantity.

Let the oil be elicited by dry distillation, and let this be purified by repeated distillation.

Pharm. Wirtem.

2.

℞ Asphaltum, in powder . ℥vj.
Decrepitated muriate of soda,
Washed sand, āā . . ℥ix.

Distil; collect and rectify the oil which passes over.

OLEUM AURANTII. *Oil of orange flower. Oil of neroli.*

Procured from the flowers of both the bitter and sweet orange (Citrus vulgaris and Citrus aurantium), but that from the former is preferred. It is obtained by submitting the flowers, with water, to distillation, and is found floating on the water in the receiver. It has an aromatic and fragrant odour somewhat differing from that of the flower.

OLEUM AURANTII FOLIUM. *Oil of orange-leaf.*

Obtained from the leaves of both the bitter and sweet orange. This, as well as the oil obtained from the orange berries, is sometimes sold under the name of *essence de petit grain.*

OLEUM AURANTII CORTICIS. *Oil of orange peel.*

Obtained from the rind of the bitter and the sweet orange. It is used in perfumery.

OLEUM BALATINUM. *Oil of ben.* (Brugnatelli.)

℞ Ben nuts, blanched, any quantity.

Bruise them in a marble mortar with a wooden pestle; enclose the paste in a woollen bag, express without heat, and strain the oil.

OLEUM BELLADONNÆ. *Oil of deadly nightshade.*

In Suabia and Wurtemburgh this oil is obtained by expression from the berries of the *Atropa belladonna.* It is limpid, of a yellow colour, insipid, and without smell. Its specific gravity is 0.9250 at 60° F. It freezes at 34° F. In its preparation, it is necessary to guard against the emanations of the oil, which cause headache. The marc retains much of the narcotic principle of the fruit, and would therefore be unfit for giving to cattle. In Wurtemburgh the oil is used in lamps. In medicine it is applied to bruises. (Dumas.)

OLEUM BENZOINI. *Oil of Benjamin.*

Obtained by distilling by a strong fire the residuum left after the sublimation of benzoic acid. It is used in making an imitation of Russia leather.

OLEUM BERGAMII. *Oleum bergamoti. Essence of bergamot. Volatile oil of bergamot.*

It may be obtained either by expression or by distillation from the rind of the *Citrus bergamia.* It is of a pale greenish yellow, very fragrant, and has a specific gravity of 0·885. Its composition is identical with that of oil of lemons, being $C^{10} H^{8}$. It is imported from the south of Europe.

OLEUM BAROSMÆ SEU DIOSMÆ. *Volatile oil of buchu.*

Yellowish brown, lighter than water; odour that of the leaves.

OLEUM BETULÆ. *Birch oil.*

Obtained by placing the inner bark of the birch in an earthen pot, the mouth of which is inverted over, and luted to, another pot sunk in the ground; then kindling a fire round the upper pot.' The products of the distillation, which consists of volatile and resinous matters, are condensed and collected in the lower pot, which serves as a receiver. It is used in the manufacturing of Russia leather, and gives to it its peculiar smell.

OLEUM BUXI. *Oil of box.*

By distillation, from box wood (*Buxus sempervirens*) without any addition; it is resolvent.

OLEUM BEZOARDICUM. *Wedels oil.*

℞	Camphor . . .	ʒij.
	Oil of almonds. . .	℥ij.
	Oil of bergamot . .	ʒss.

Alkanet root, sufficient to colour it.

OLEUM CACAO. *Cocoa oil. Butter of cacao.*

Ph. Bat.

Roast the seeds of *Theobroma cacao,* or chocolate nuts, over a gentle fire, so that they may be more readily divested of the skin. Then let them be bruised into powder, and being enclosed in a linen bag, let them be exposed to the vapour of boiling water, and after the vapour has thus intimately penetrated the whole mass, let the bag be consigned to a press moderately heated. The butyraceous oil expressed by these means is to be melted by a gentle fire, strained through a linen cloth, and then digested in warm water for some hours, to purify it from foreign matter.

OLEUM CADINUM. *Huile de cade.*

Obtained from *Juniperus oxycedrus,* used as tar.

OLEUM CAJUPUTI. *Oleum melaleucæ. Cajuput,* or *Kyapootie oil.*

It is prepared in the East Indies by distilling the dry leaves of *Melaleuca minor* with water. It is said to be chiefly prepared at Banda. Its colour is green. It boils at 343½°. Its composition is $C^{10}H^{9}O$. It is a powerful antispasmodic, diffusible stimulant, and sudorific, and in India is much used as a medicine, both externally and internally.

OLEUM CANTHARIDIS. *Oleum cum cantharidibus. Oil of cantharides.*

Codex.

℞	Cantharides in coarse powder	℥ij.
	Olive oil . . .	℥xvj.

Digest for six hours, with the heat of a water-bath, then press and filter.

An oil may be obtained from cantharides by treating the flies with ether, and evaporating the solution until the ether has been driven off. This oil contains the *Cantharidine*, or active principle of the fly, and is a powerful vesicatory.

OLEUM CAMPHORÆ. See *Linimentum camphoræ.*

OLEUM CAMPHORÆ. *Oleum camphoræ nitricatum. Nitric oil of camphor.*

Obtained by dissolving large quantities of camphor in nitric acid. The solution separates into two portions; that which contains the camphor, and most of the acid floats upon the top of the other, in the form of a very pale yellow coloured oily fluid, to which the above name has been applied. It is soluble in alcohol.

OLEUM CAMPHORÆ. *Camphor oil. Liquid camphor.*

Obtained by making deep incisions into the trunk of *Dryobalnanops aromatica*, with an axe. The oil gushes out and is received into bamboes and other proper vessels. It is sometimes perfectly limpid, transparent, and colourless; but is generally more or less yellowish or brownish. Its odour is somewhat analogous to that of oil of cajuputi, combined with the odour of camphor and cardamoms. According to Pelouze, it is composed of $C^{20}H^{16}$. By exposure to air it rapidly oxidizes. It has been employed in the manufacture of scented soap.

OLEUM CANNABIS. *Oil of hemp-seed.*

This oil is obtained by expression from the seeds of *Cannabis sativa.* When fresh drawn it is greenish-yellow, but becomes yellow by keeping. Its smell is disagreeable, but it has little taste. It dissolves in all proportions in boiling alcohol; but cold alcohol dissolves only the 30th of its weight. At 5° Fah. it becomes thick, and at — 17° it freezes like oil of walnuts. It is used for lamps in Russia and other countries. It is also used in the manufacture of soap, and in varnishes.

OLEUM CARDAMOMI. *Oil of cardamom seeds.*

Obtained by distilling cardamoms with water.

OLEUM CARLINÆ. *Oleum radicis carlinæ.*

Obtained from the root of the carline thistle; fragrant; sinks in water.

OLEUM CARUI. *Oil of caraway.*

Obtained by submitting the bruised fruit of *Carum carui* to distillation with water. The quantity obtained from a given weight of fruit is variable; according to Recluz, about 4·7 per cent., but 5·43 per cent. has been obtained. When fresh prepared, it is colourless; but it becomes yellow and subsequently brown by keeping. It is limpid, and has the aromatic odour of the fruit and an acrid taste; its specific gravity is 0·950. It is aromatic, stimulant, and carminative.

OLEUM CARYOPHYLLORUM. *Oil of cloves.*

Obtained by submitting cloves (*the unexpanded flowers of Caryophyllus aromaticus*) to repeated distillation with water. It is one of the least volatile, and most difficult to distil of all the volatile oils. It has the well-known smell of cloves, and a hot disagreeable taste. It is colourless or light yellow when fresh, but the colour deepens by keeping, and at length becomes a dark brown. Its specific gravity varies from 1·055 to 1·061. It is soluble in alcohol, ether, and concentrated acetic acid. On an average cloves yield (when subjected to repeated cohobations) from 17 to 22 per cent. of volatile oil. It is sometimes used to relieve toothache, but its more frequent use is as an addition to purgatives.

OLEUM CASSIÆ. *Oil of cassia. Oil of Chinese cinnamon.*

Obtained from cassia-lignea by distillation with water. Its properties and composition, together with its effects and uses, are similar to those of oil of cinnamon, to which, however, it is inferior in odour and flavour. It is usually of a pale yellow colour. About 12 oz. of oil are obtained from 100 lbs. of the bark.

OLEUM CEBADILLÆ. *Oil of cebadilla.*

Is a green fatty matter procured from the Asagria officinalis; it is lighter than water, and has a faint, somewhat rancid taste.

OLEUM CEDRI. *Oleum citri. Oil of cedrat. Essence of cedrat.*

(1.) The oil first obtained by distillation, from the yellow part of citron-peel (*Citrus medica*); it is colourless, very thin, and fragrant.

(2.) The second oil obtained by the distillation of the yellow part of citron-peel; greenish; 100 citrons yield 1 oz. of the white oil, and ½ oz. of the greenish. It may also be obtained by expression.

OLEUM CERÆ. *Oil of wax.*

When bees-wax is distilled a concrete substance comes over, (butter of wax), which by re-distillation yields a liquid oil (oil of wax). The wax is sometimes mixed with an equal weight of lime to facilitate the distillation.

OLEUM CETACEUM. *Spermaceti oil. Sperm oil.*

Found in a large cavity of the upper jaw of the whale, (*Physeter macrocephalus*,) mixed with spermaceti, from which it is separated by filtration. It is a clear and remarkably thin oil, and is peculiarly adapted for heavy machinery, where there is very rapid motion, as it does not become thick and viscid, like some other oils. It is also much used for burning, as it gives a good light and produces very little smell. A gallon of the oil weighs about 8¾ lbs.

OLEUM CHARTÆ. *Oil of paper. Rag oil.*

Bate directs this oil to be made by burning paper on a tin plate, and collecting the oil which is condensed on the cold metal. A better arrangement than this might be contrived for collecting the oil. It was formerly much esteemed as a remedy for alopecia, or the falling off of the hair; also for toothache, earache, &c.

OLEUM CHÆROPHYLLI. *Oil of chervil.*

(Pharm. Wirtem.)

℞	Fresh herb of chervil .	25 parts.
	Water . . .	75 „
	Muriate of soda . .	3 „

Macerate for three days, then distil, and separate the oil from the water.

OLEUM CHENOPODII. (U. S.) *Oil of wormseed.*

This oil is distilled from the *Chenopodium anthelminticum*, and is peculiar to the United States. When recently distilled, it is of a light yellow colour, but becomes deeper, and even brownish, by age. It possesses in an eminent degree the peculiar flavour of the plant. Its specific gravity is 0·908. It is used as an anthelmintic, in doses of from 4 to 8 drops for a child, morning and evening, for 3 or 4 days, followed by a brisk cathartic.

OLEUM CINNAMOMI. *Oleum cinnamomi veri. Oil of cinnamon.*

Obtained in Ceylon by macerating the inferior pieces of the bark of *Cinnamomum zeylanicum* reduced to a coarse powder, in sea-water for a few days, when it is submitted to distillation. As imported, the colour of the oil varies from yellow to cherry-red. The paler varieties are most esteemed; hence London druggists frequently submit the red variety to distillation, when two pale yellow oils are obtained; one lighter, (amounting to about one-fourth of the whole,) the other heavier than water. The loss by this process is about 10 per cent. The quantity of oil obtained from 11 lbs. of bark is 1 oz.

OLEUM CITRI FLORUM. *Oil of citron flowers.*

Obtained by distillation from the flowers of the *Citrus medica.* It is amber coloured and slightly fragrant. 60 lbs. of the flowers yield 1 oz. of oil.

OLEUM COCOIS NUCIFERÆ. *Oil of cocoa-nut. Butter of cocoa-nut.*

This oil is obtained by expression from the kernel of the cocoa-nut, the fruit of the *Cocos nucifera.* It is white, and of a pretty hard consistence. Of late years it has been employed, in considerable quantity, in this country, in the manufacture of soap, as a substitute for tallow. It contains elain and stearin, the latter of which is used as a substitute for wax, in making candles; for which, on account of the high temperature requisite to fuse it, it answers very well.

OLEUM DE COLZA. *Oil of colza.*

This is a superior kind of rape-seed oil, extracted from the seeds of a variety of the *Brassica campestris.* It is used in lamps, and has a specific gravity of 0·9136 at 59°. The seeds yield 39 per cent. of their weight of oil.

OLEUM CONII. *Oil of hemlock.*

Codex.

℞ Fresh leaves of hemlock . lbj.
Olive oil . . . lbij.

Bruise the leaves, and heat them with the oil over a slow fire, till the moisture of the herb is driven off, then digest them for two hours, and strain, press, and filter.

OLEUM COPAIBÆ. *Essential oil of copaiba.*

Obtained by distilling balsam of copaiba with water. When most of the water has passed over, heat it, return it to the still, and resume the distillation; repeat this process so long as a sensible quantity of oil passes over with the water. From 249 lbs. of balsam, 128 lbs. of volatile oil and 120 lbs. of resin were obtained. When rectified and freed from water by means of chloride of calcium, it has a specific gravity of 0·878. It is colourless, but possesses an acrid taste, and an aromatic peculiar odour.

Oil of copaiba is isomeric with oil of turpentine, being composed of $C^{10}H^{8}$. This oil is preferred by some practitioners to any other preparation of the balsam, in doses of from ten to twenty drops, which may be gradually increased. It may be taken on a lump of sugar.

OLEUM CORIANDRI. *Volatile oil of coriander.*

Obtained by distillation from the fruit of *Coriandrum sativum.* It is yellowish, and possesses the medicinal qualities, taste, and agreeable odour of the coriander.

OLEUM CORYLI. *Hazel-nut oil. Nut oil.*

Is obtained from the hazel-nut, the fruit of *Corylus avellana.* It is a very fine oil, sometimes substituted for oil of ben; it is used by painters as a vehicle for their colours.

OLEUM CROCI. *Volatile oil of saffron.*

Obtained by distilling saffron with water. It is yellow, heavier than water, has a burning acrid taste, and is somewhat soluble in water. By keeping, it becomes white, solid, and lighter than water. It is probable that upon it depend the medicinal properties of the saffron.

OLEUM CROTONIS. *Oleum tiglii. Croton oil.*

This oil is obtained by expression from the seeds of *Croton tiglium.* It is partly imported from the East Indies, partly expressed in London. The seeds yield about 30 per cent. of oil, though double this quantity may be obtained by exhausting them with alcohol or ether. As met with in commerce, it varies from a pale straw-colour to a dark brown. The specific gravity of different specimens varies from 0·947 to 0·953 at 60°.

When genuine this oil is perfectly soluble in an equal bulk of alcohol, specific gravity ·796, at ordinary temperatures. It is one of the most active drastic purgatives. Its virtue has been stated to be due to a peculiar volatile acid (crotonic acid) which exists in a free state in the oil.

OLEUM CUMINI. *Oleum cymini. Oil of cummin.*

Obtained by submitting the fruit of Cuminum cyminum to distillation with water. Sixteen cwts. of fruit yield about 144 lbs. of oil. As usually met with it is pale yellow and limpid. Its smell is disagreeable; its taste very acrid. It consists of two oils, one a carbo-hydrogen, called cumen or cymen, $C^{18}H^{24}$ the other, an oxygenated oil, called hydruret of cumyl, $C^{20}H^{11}O^{2}+H$. It is in the volatile oil that the peculiar properties of cumin reside.

OLEUM CUBEBÆ. *Volatile oil of cubebs. Oil of cubebs.*

Prepared by grinding the fruit of *Piper cubeba,* and distilling it with water. Cubebs yield about 10·5 per cent of a transparent, slightly-coloured (when pure, colourless) volatile oil, having a specific gravity 0·929. It has the odour of cubebs, and a hot, aromatic, bitter taste. It is composed of carbon and hydrogen in the same proportions as in oil of turpentine, but its formula is $C^{15}H^{12}$, being half as much again as oil of turpentine. Oil of cubebs is an excellent and most convenient substitute for the powder, in doses of from 10 to 12 drops, gradually increased.

OLEUM DIGITALIS. *Oil of foxglove.*

Codex.

Made from foxglove by a similar process to that for oleum conii.

OLEUM ERGOTÆ. *Oil of ergot.*

Obtained by submitting the etherial tincture of ergot, (*Secale cornutum,*) procured by percolation, to evaporation at a gentle heat. Its colour is reddish brown. Its taste is slightly acrid. It is lighter than water, and insoluble in alcohol.

OLEUM EXCESTRENSE. *Exeter oil.*

Lond. Ph. 1677.

℞ Green oil of elder . lbxvj.
Euphorbium,
Mustard,
Castor,
Pyrethrium, āā . . ℥j.

The original formula had 31 ingredients, which were to be infused in wine and oil, but it is now seldom made. The green oil of elder is usually substituted for it.

OLEUM FAGI. *Beech-nut, or Beech-mast oil.*

Obtained by expression, from the fruit of *Fagus sylvatica.* This is a very clear oil, and keeps well. Its specific gravity is 0·9225. When fresh, it is a little acrid, which property it however loses by age or boiling water. It is used in

France in cooking, and also for burning. It is sometimes eaten with salads.

OLEUM FŒNICULI. *Oleum fœniculi dulcis. Oil of sweet fennel.*

Obtained by submitting the bruised fruit of *Fœniculum dulce* to distillation with water. Nineteen cwts. of the fruit (shorts) yield 73 lbs. of oil. (Pereira.) This oil is more agreeable both in taste and smell, than that obtained from wild fennel. It is stimulant and carminative, but is seldom used. The dose is from two to twenty drops.

OLEUM FŒNICULI VULGARIS. *Oil of common, wild, or bitter fennel.*

This is a pale yellow, limpid oil; specific gravity 0·997; and having the peculiar odour of the fruit. When cooled below 50° it crystallizes. Two kinds of crystals are formed, the one in large plates, heavier than water, and much less volatile than the second, which is lighter than water, and passes over first when both are distilled together; the first is isomeric with oil of anise or $C^{10}H^{6}O$, the second with oil of turpentine $C^{10}H^{8}$.

OLEUM FŒNUGRÆCI. *Oil of fœnugreek seeds.*

Codex.

Made from fœnugreek seeds by a similar process to that for Oleum cum cantharidibus.

OLEUM FILICIS MARIS. *Oleum filicis. Extractum filicis æthereum, seu balsamum filicis. Oil of male fern.*

Obtained by evaporating an etherial tincture. A pound of the rhizome yielded Soubeiran, an ounce and a half of thick black oil, having the aromatic odour of fern. It may also be prepared from the buds. By substituting alcohol for ether, twelve or thirteen drachms of oil can be obtained from 2⅔ lbs. of the rhizome.

OLEUM FORMICARUM. *Oil of ants.*

Niemann.

℞ Ants . . .	℥iv.
Olive oil . . .	℥j.

Digest in a moderate heat for twenty days, and strain.

OLEUM FULIGINIS. *Oil of wood soot.*

Lond. Ph. 1746.

Obtained by distillation from wood soot. It is fœtid, formerly used in epilepsy.

OLEUM GAULTHERIÆ. (U. S.) *Oil of partridge berry.*

This oil is used in the United States, and is prepared chiefly in New Jersey. It is directed by the Pharmacopœia to be prepared by distillation from the leaves of the *Gaultheria procumbens;* but the whole plant is usually employed. When fresh it is nearly colourless, but as found in the shops it is of a brownish yellow or reddish colour. It has a sweetish, slightly pungent, peculiar taste, and a very agreeable characteristic odour, by which it may be readily distinguished from all other officinal oils. It is the heaviest of the known essential oils, having a specific gravity of 1·173. Its boiling point is 412°. It is used chiefly on account of its pleasant flavour to cover the taste of other medicines.

OLEUM GUAIACI. *Oil of guaiacum.*

Fill a capacious retort with guaiacum raspings, lute a receiver to it, and gradually apply the heat of a sand-bath until a thick empyreumatic oil shall have come over.

OLEUM HEDEOMÆ. (U. S.) *Oil of pennyroyal.*

This, though analogous in properties to the European pennyroyal, (*Mentha pulegium*,) is derived from a distinct plant, (*Hedeoma pulegioides*,) peculiar to North America. It has a light yellow colour, with the odour and taste of the herb. Its specific gravity is 0·948. It may be used as a remedy for flatulent colic, to correct the operation of griping medicines, and to impart flavour to mixtures. The dose is from two to ten drops.

OLEUM HELIANTHI. *Oil of sunflower.*

This is extracted from the seeds of *Helianthus annuus.* It is limpid, of a yellow colour, an agreeable odour, and slight taste. It freezes at 60° Fah. Its specific gravity is 0·9262 at 59°. It is used as food and for burning.

OLEUM HYOSCYAMI. *Oil of henbane.*

Codex.

Made from henbane by a similar process to that for Oleum conii.

OLEUM HYPERICI. *Balsamum hyperici simplex. Oil of St. John's wort.*

℞	Flowers of St. John's wort .	℥iv.
	Olive oil . . .	lbij.

Infuse till the oil is well coloured, then strain.

OLEUM HYSSOPI. *Oil of hyssop.*

Obtained by distillation from *Hyssopus officinalis.* 2 cwt. yielded 6 oz. of oil. It is aromatic, stimulant, and carminative.

OLEUM JASMINI. *Oil of jasmine. Essence of jasmine.*

Obtained by distillation from the flowers of jasminum grandiflorum, not picked from their cups; yielded in very small quantity; highly fragrant; brought from the East Indies. *Oil of jasmine* is also made by putting jasmine flowers between layers of wool saturated with olive oil, in a covered vessel, and afterwards pressing out the oil when it has absorbed the volatile oil of the flowers. The *Essence* is also said to be sometimes made by mixing the oil last described with spirit, and then distilling off the spirit, but it is more probably made by directly distilling the flowers with spirit.

OLEUM JATROPHÆ CURCADIS. *Oleum infernale. Oil of jatropha curcas.*

Prepared by expression from the seeds of *Jatropha curcas.* It is a drastic purgative resembling in its properties croton oil, and in large doses is an energetic poison. In India it is used for lamps.

OLEUM JECORIS ASELLI. *Oleum morrhuæ. Cod liver oil.*

This oil is obtained from the livers of the common cod, (*Gadus morrhua*,) by exposing them to the sun, when, as the livers corrupt, the oil runs from them and is collected in a vessel set to receive it; after which it is filtered and exported. As thus prepared it is of a dark brown colour, owing to the presence of some of the solid matters of the fish in a state of decomposition. But it may be prepared nearly colourless, by exposing the fresh livers of the fish to the heat of a stove not exceeding 200° Fah., in an earthen pan, or other vessel, when the oil runs out, and may be collected and filtered to separate any solid particles. Cod liver oil contains a trace of *iodine* and *bromine*, which however is too small to be of any activity as a medicine. It is employed internally as a remedial agent in *rheumatism* and *scrofula*, requiring a long continued use to prove successful.

OLEUM JUGLANDIS. *Oleum nucum juglandis. Oil of walnuts.*

Obtained by expression from *walnuts*, the fruit of *Juglans regia*. It makes good plaisters, but will not keep; used by painters; it is very drying; 90 lbs. avoir. of kernel yield 20 to 24 quart bottles of oil. When cold drawn it is eaten with salads.

OLEUM JUNIPERI. *Oil of juniper.*

This oil is obtained by submitting the fruit, tops, or wood of *Juniperus communis* to distillation with water. The full-grown green fruit yields more than the ripe fruit, for in the act of ripening a portion of the oil becomes converted into resin. It is limpid and colourless, or has a slight shade of yellow. Its specific gravity is 0·911. It has the well known smell and taste of juniper berries. Spirit impregnated with it constitutes the well-known *Geneva* of the Dutch. It is said to be sometimes adulterated with oil of turpentine. This fraud may be detected by taking the specific gravity of the oil, which would be lighter than that above given if mixed with oil of turpentine. According to Blanchet, it consists of two isomeric oils; one colourless and more volatile, sp. gr. 0·8392; the other coloured and less volatile, sp. gr. 0·8784. The composition of oil of juniper is analogous to that of oil of turpentine, being $C^{10} H^{8}$. The physiological effects of oil of juniper are similar to those of the terebinthinate substances.

OLEUM LAPIDUM PRUNARUM. *Oil of plum stones.*

This is extracted from the kernels of the common plum (*Prunus domestica*). It is limpid, of a yellowish brown colour, inodorous, and possesses a taste analogous to that of oil of almonds. At 60° its specific gravity is 0·9127; it freezes at 16°. It easily goes rancid. It is one of the best oils for burning.

OLEUM LATERITIUM. *Oil of bricks.*

Heat bricks to redness, and quench them in olive oil; when they have imbibed the oil as much as they will, break them into small pieces, put them into a retort, and distil with the heat of a sand-bath. The oil which passes over is to be separated and preserved.

OLEUM LATHYRIS. *Oil of garden spurge.*

From *Euphorbia lathyris.* Cathartic, dose from gutt. iv to viij; 14 oz. of seeds yield 6 oz. of oil, by pressure.

OLEUM LAURI. *Oleum laurinum. Oil of bay.*

Obtained from either the fresh or dried berries of *Laurus nobilis*; from the former by bruising and boiling, then pressing through a sack; the oil floats on the surface, and when cold is of a butyraceous consistence. It is obtained from the dried berries, by exposing them to the vapour of water until thoroughly soaked, and then rapidly pressing them between heated metallic plates. By the latter method they yield one-fifth of their weight of oil. It is imported in barrels from Trieste. It has a greenish colour and the odour of the berries. It is occasionally employed in sprains and bruises, but its principal use is in veterinary medicine.

OLEUM LAURI VOLATILUM. *Volatile oil of laurel berries. Oil of sweet bay.*

Is obtained by distilling the berries with water. The crude oil is pale yellow, transparent readily soluble in alcohol and ether. By redistillation it yields two isomeric oils, ($C^{20} H^{16}O$,) one having a specific gravity of 0·857, the other 0·835 while a brown balsamic matter remains in the retort.

OLEUM LAURO-CERASI. *Volatile oil of the cherry laurel.*

By distillation with water, cherry laurel leaves yield a volatile oil and a distilled water (*aqua lauro-cerasi*). Cherry-laurel oil is pale yellow, heavier than water, and like the volatile oil of bitter almonds, contains *hydrocyanic acid* and *hydruret of benzyle*. When exposed to air it attracts oxygen and deposits benzoic acid; oil of vitriol colours it red. It appears to be a weaker poison than the oil of bitter almonds, with which, according to Robiquet, it agrees in all its chemical properties.

OLEUM LAVANDULÆ. *Oleum Lavandulæ veræ. English oil of lavender.*

Prepared by distilling lavender flowers with water. It has a pale yellow colour, a hot taste, and very fragrant odour. Its specific gravity varies from 0·877 to 0·905. The lightest is the best. Its formula is $C^{15} H^{14} O^{2}$. One pound of oil is obtained from 50 lbs. to 70 lbs. of the flowers. When the stalks and leaves are distilled with the flowers, the odour of the oil is considerably deteriorated. Its chief use is as a perfume, though medicinally it is stimulant and stomachic, in doses of from gtt. ij to gtt. v.

OLEUM LIMONUM. *Essential oil of lemon-peel. Essence of lemons.*

This oil is usually procured by expression from the rind of the lemon, the fruit of the *Citrus limonum*, and is then somewhat turbid and liable to undergo change by keeping, owing to the mucilaginous matter which it contains in solution. It may also be obtained by distillation, when it is pure and not liable to change from keeping, but its flavour is less pleasant and sweet. It is imported chiefly from Portugal and Italy, though some is procured in France. When quite pure it is colourless, fragrant, and limpid, and has a specific gravity of 0·847 at 70° F. It is soluble in all proportion in absolute alcohol, but spirit of wine, of the specific gravity of 0·847, dissolves only 14 per cent. of it at 60°. Oil of lemons is isomeric with oil of turpentine, being composed of $C^{10} H^{8}$.

OLEUM LILIARUM. (P. L. 1679.) *Oil of white lilies.*

Obtained by infusing the flowers of *Lilium candidum* in olive oil, exposed to the sun for a week, and then straining.

OLEUM LINI. *Linseed oil.*

Obtained by expression from the ripe seeds of the *Linum usitatissimum* or common *flax*, which furnish about 22 per cent. of their weight of it. It is usually amber-coloured, but may be rendered quite colourless. It becomes solid at 3°, provided that temperature be continued for several days. It dissolves in 5 times its weight of boiling alcohol, in 40 of cold alcohol, and in 1·6 times its weight of ether. It is principally employed by painters for the mixing of colours, as, when exposed to air, it has the property of drying into a hard transparent varnish, which change is greatly facilitated by boiling the oil either with or without litharge, sugar of lead, or white vitriol. Medicinally, linseed oil is rarely employed internally. Its most ordinary use is for the preparation of linimentum calcis.

OLEUM LUMBRICORUM. *Oil of earth-worms.*

Edin. Ph. 1744.

℞	Earth-worms, washed . .	lbss.
	Olive oil	Oiss.
	White wine . . .	Oss.

Boil them together gently, until the wine is evaporated, then strain the oil.

This oil was originally made by submitting earth-worms to distillation in a retort.

OLEUM LUPULI. *Oil of hops.*

A greenish-yellow oil, having the smell and taste of hops. It may be obtained by distilling hops with water, or by treating them with ether. It has a sp. gr.

·910. By keeping it becomes converted into a kind of resin.

OLEUM MACIDIS. *Essential oil of mace.*

Procured by submitting mace (the *arillus* of *Myristica officinalis*) with water to distillation. It is colourless, or pale yellow, lighter than water, and has the flavour and odour of mace. Its composition, effects, and uses, are similar to those of oil of nutmegs.

OLEUM MADI. *Oil of madia sativa.*

Obtained by expression from the seeds of *Madia sativa.* It is of a more agreeable flavour than the oils obtained from some other *oleiferous plants.* The seeds yield about 20 per cent. of oil.

OLEUM MARJORANÆ. *Oil of sweet marjoram.*

Obtained by submitting the herb (*Marjorana hortensis*) to distillation with water. It is pale yellow, or brownish, and possesses the strong odour and taste of the marjoram. It is tonic and stimulant; 85 lbs. of fresh herbs yield 3 oz. ʒvj.

OLEUM MELISSÆ. *Oil of balm.*

Obtained from *Melissa officinalis* by distillation with water. It is of a pale yellow colour, and has the peculiar odour of balm. Its specific gravity is 0·975. Oil of lemon is said to be frequently substituted for it. It is tonic and stimulant.

OLEUM MENTHÆ PIPERITÆ. *Oil of peppermint.*

Is obtained by distilling the fresh herb (*Mentha piperita*) with water. It is colourless, or nearly so, sometimes having a pale yellow or greenish tint, but becoming reddish by age. It has the penetrating odour of the plant, and a burning aromatic taste, followed by a sensation of cold. Its specific gravity is 0·902. It boils at 365° F., and consists, according to Kane, of $C^{21} H^{20} O^{2}$. In a warm, dry, and favourable season, the produce of oil, from a given quantity of fresh herb, is twice as great as it is in a wet and cold season. The largest produce is three drachms and a half of oil from two pounds of fresh peppermint, and the smallest about a drachm and a half from the same quantity. *English oil of peppermint* is superior to the foreign. It is carminative, stimulant, and antispasmodic.

OLEUM MENTHÆ PULEGII. *Oil of pennyroyal.*

Is obtained from *Mentha pulegium.* It has a pale colour, a warm taste, and the peculiar odour of the herb. It boils at 395° F. Its specific gravity is 0·925. It is composed, according to Kane, of $C_1^0 H^8 O$. The fresh herb yields from 1-120th to 1-100th of its weight of oil. It is stimulant, carminative, and antispasmodic, and is used as an emmenagogue.

OLEUM MENTHÆ VIRIDIS. *Oil of spearmint.*

Procured in the same manner as the oil of peppermint from *Mentha viridis.* It is of a pale yellow colour, but becomes reddish by age. It has the odour and taste of the plant, and is lighter than water. Its specific gravity is 0·914. It boils at 320° F., and is composed, according to Kane, of $C^{35} H^{28} O$. The average produce of the essential oil is not more than the 1-500th part of the fresh herb. It is carminative and stimulant.

OLEUM MILLEFOLII. *Oil of milfoil flowers.*

Obtained by distillation from the flowers of *Achillea millefolium.* 14 lbs. of the dry flowers yield ʒiij.

OLEUM MONARDÆ. (U. S.) *Oil of horsemint.*

Prepared by distillation from the fresh herb of the *Monarda punctata.* It has a reddish amber colour, a fragrant odour, and a warm, very pungent taste. Externally it is a powerful rubefacient, even producing vesication. Internally it is stimulant and carminative.

OLEUM E MUCILAGINIBUS. *Oil of mucilages.*

Lond. Ph. 1746.

℞		
	Fresh marshmallow root	lbss.
	Linseed,	
	Fœnugreek seed, āā	℥iij.
	Water	lbij.
	Olive oil	lbiv.

Boil the bruised seeds and root with the water for half an hour over a slow fire; then add the oil, and boil again until the water is entirely evaporated, then carefully decant the oil.

OLEUM MYRISTICÆ EXPRESSUM. *Adeps myristicæ. Oleum moschatæ. Expressed oil of nutmegs. Expressed oil of mace.*

Prepared by beating the nutmegs to a paste, which is to be inclosed in a bag, and then exposed to the vapour of water, and afterwards expressing the oil with heated plates. It is of an orange colour, firm consistence, and fragrant odour, like that of the seeds from which it is obtained. It is soluble in 4 parts of boiling alcohol. It is occasionally employed externally in chronic rheumatism and palsy.

OLEUM MYRISTICÆ. *Oleum nucis moschatæ. Essential oil of nutmeg.*

Obtained by distilling together nutmegs and water. It is usually imported. It is colourless or pale yellow; has the odour and taste of nutmegs, and a viscid consistence. By agitation with water it separates into two oils, one lighter than the water, the other heavier. It is seldom employed medicinally.

OLEUM MYRTI ESSENTIALE. *Essential oil of myrtle. Essence of myrtle.*

This is a fragrant volatile oil, obtained by distillation from the flowers and leaves of *Myrtus communis.* 100 lbs. of the fresh leaves yielded from 2½ oz. to 4½ oz.

OLEUM NARCISSI. *Essence of jonquil.*

Used in perfumery.

OLEUM NERVINUM. *Oleum bubulum. Neats-foot oil. Trotter oil. Nerve oil.*

Obtained by boiling neats' feet and tripe in water. Used to soften leather and to oil machinery.

OLEUM NUCIS PINI. *Oil of stone-pine kernels.*

Obtained by expression from the seeds of the *Pinus pinea.* It grows rank very soon. 16 lbs. of kernels yield 5 lbs. of oil.

OLEUM OLIVÆ. *Oil of olives. Salad oil. Sweet oil.*

There are four different kinds of olive oil known in the districts where it is prepared, namely,

1. *Virgin oil.*—This term is applied, in the district of Montpelier, to that which spontaneously separates, from the paste of crushed olives. This oil is not met with in commerce, being all used by the inhabitants of the district.

In the district of Aix the name is applied, to that which is first obtained from the olives, ground to a paste in a mill, and submitted to a slight pressure two or three days after collecting the fruit. A good deal of this oil is found in commerce.

2. *Ordinary oil.*—In the district of Montpelier this oil is prepared by pressing the olives, previously crushed and mixed, with boiling water. At Aix the oil is prepared by pressing the olives

which have been used for obtaining the virgin oil, to which it is inferior.

3. *Oil of the infernal regions..* (*Oleum omphacinum.*)—The water which has been used in the preceding operations is in some districts conducted into large *reservoirs*, where it is left for many days, during which time any oil which may have remained in the water is separated, but it is only fit for burning.

4. *Fermented oil.*—Is obtained by leaving the fresh olives in heaps for some time and pouring boiling water on them before pressing. This oil, which is much injured by the process, is rarely met with in commerce.

Provence oil, (*Oleum provinciale,*) the produce of Aix, is most esteemed. *Florence oil* is a very fine kind, imported from Leghorn. *Lucca oil* is imported in jars holding 19 gallons each. *Genoa oil* is another fine kind. *Gallipoli oil* is imported in casks. *Sicily* and *Spanish* are inferior kinds.

As met with in commerce it is an unctuous fluid of a pale yellow or greenish hue. When good it has scarcely any smell. Its taste is bland and mild. Its specific gravity at 77° F. is 0·9109, according to Saussure. It is soluble in 1½ times its weight of ether, but very sparingly so in alcohol.

OLEUM OLIVARUM OXYGENATUM. *Oxygenated olive oil.*

Ph. Bat.

℞ Olive oil . . . . ℥xvi.

Put it into a capacious receiver placed in cold water, or in snow if convenient, and pass chlorine gas through it slowly for several days, or until it has become thick and viscid. It is then to be washed with water, to free it from muriatic acid.

OLEUM ORIGANI. *Oil of common marjoram. Oil of thyme.*

Obtained by submitting the herb (*Origanum vulgare*) to distillation with water. As imported it has a red colour, of which it may be deprived by redistillation. Its taste is acrid; its odour like that of the plant. It boils at 354° F., and is composed, according to Kane, of $C^{50} H^{40} O$. Its specific gravity is 0·867. 2 cwts. of the herb yield on an average 1 lb. of oil, but it varies exceedingly with the season and culture of the plant. It is powerfully acrid and stimulant, and is frequently mixed with liniments, for sprains, bruises, rheumatism, &c.

OLEUM PALMÆ. *Oleum cocois butyraceæ. Palm oil.*

Is imported from the western coast of Africa, principally from Guinea, where it is procured by expression from the fruit of *Elais guineensis.* It is solid, of a rich golden yellow colour, a sweetish taste, and agreeable odour, somewhat resembling that of the rhizome of the *Florentine iris.* By exposure to light it is bleached. The Africans use it instead of butter. It is emollient, and is occasionally applied to bruises, sprains, &c. Its chief consumption is in the manufacture of soap.

OLEUM PAPAVERIS. *Poppy oil.*

Obtained by expression from the seeds of *Papaver somniferum.* It is of a yellow colour, without smell, taste not unpleasant. Its specific gravity is 0·9249 at 60°. It freezes at 0°. It is sometimes used as a substitute for olive oil at table; it is also used by painters, its drying properties being increased by the addition of litharge. It has no narcotic properties.

OLEUM PETROLEI VOLATILE. *Essential oil of petrolium.*

(Swediaur.)

℞ Petrolium . . . . lbij.
Water . . . . lbiv.

Distil over a slow fire till limpid oil ceases to pass over.

Stimulant and resolvent. Chiefly used externally in arthrodynia and paralysis.

OLEUM PHOSPHORATUM. *Phosphorated oil.*

Ph. Borussica.

℞ Phosphorus, dry, and cut into small pieces . gr. xij.
Almond oil, recently prepared . . . . ℥j.

Melt the phosphorus in the oil by the aid of warm water; then agitate until it appears to be dissolved. 1 oz. of oil dissolves about 4 grs. of phosphorus. Dose, from 5 to 10 drops, in some mucilaginous liquid. It may be aromatized by a few drops of some essential oil, as of bergamot.

OLEUM PICIS LIQUIDÆ. *Oleum pini rubrum. Oil of tar.*

Obtained by distillation from tar. It is a reddish limpid fluid having the odour of tar. By redistillation it may be rendered colourless, and then resembles oil of turpentine. It is occasionally applied to ringworm and scalled head.

OLEUM PICHURIUM. *Oleum fabarum pichurium. Oil of sassafras nuts, or pichurim beans.*

Obtained by expression from the seeds of *Nectandra puchury* and *Aydendron cujumary.* It is white, butyraceous, smelling like sassafras; becomes yellowish and tallowy by age. 1 lb. of the seeds yield about 1½ oz. of oil.

OLEUM PIMENTÆ. *Oil of pimento. Oil of allspice.*

Obtained by submitting the fruit of *Eugenia pimenta* to distillation with water. Mr. Whipple obtained, from 8 cwt. of pimento, 41 lbs. 6 oz. of oil, or about 6 per cent. The oil of pimento of commerce is a mixture of two oils, one heavy, the other light, of which the lighter distils over first, thus differing from oil of cloves.

OLEUM PIMPINELLÆ.

Obtained by distillation from the roots of *Pimpernel or Common burnet* (*Sanguisorba officinalis*). It is of a blue colour, and possesses cordial properties.

OLEUM PIPERIS. *Volatile oil of pepper.*

Obtained by distillation from common pepper (the fruit or berry of *Piper nigrum*). When pure it is colourless, possessing the odour and taste of pepper, but by keeping it becomes gradually yellow. It is lighter than water, and is composed, according to Dumas, of $C^{10} H^{8}$, so that it is isomeric with oil of turpentine.

OLEUM RAPÆ. *Brown rape oil.*

Procured by expression from the seeds of the *Brassica campestris oleifera.* It is of a yellowish colour. Its specific gravity is 0.914; it freezes at 28° Fa. It dries slowly, makes a softish soap, and smokes much when burned.

OLEUM RAPÆ REFINUM. *Refined rape oil. Pale rape oil.*

From brown rape oil, by mixing 2lbs. of oil of vitriol and 4lbs. of water, with each cwt. of the oil, beating the whole well together, allowing it to stand for eight or ten days in a warm place, pouring off the oil and filtering through flannel or felt. Used for burning, and sometimes for machinery, &c.

OLEUM RAPHANI. *Oil of wild mustard.*

Is obtained by expression from the seeds of *Rhaphanus rhaphanistrum.*

OLEUM RAVENSARÆ. *Oil of raventsara.*

Obtained from the leaves of *Ravensara aromatica,* by distillation with water. It is said to be sometimes sold for oil of cloves.

OLEUM RHODII. *Oil of rhodium.*

Obtained by distillation from Levant lignum rhodium, the root of Canary rose wood, (*Genista canariensis*) 80lbs. yielded ʒix; 80lbs. of a very resinous old wood yielded 2oz. It is light, yellowish, but by keeping grows red. It is imported from the Levant.

OLEUM RHODIOLÆ. *Oil of rosewort.*

Obtained by distillation from the root of *Rhodiolæ roseæ.* It is of a yellowish colour: 1lb yields ʒj; said to be sold for oil of rhodium, and the water for rose water.

OLEUM RICINI. *Oleum de kerva. Oleum kervinum. Castor oil. Palma christi oil.*

Obtained by expression from the shelled fruit of *Ricinus communis.* The oil thus obtained is heated with water until the water boils, by which the mucilage and albumen are separated. It is then strained through flannel and put into canisters. When expressed from the seeds cold, it is quite transparent and has only a slight tinge of yellow, but when it is obtained by boiling, it has most commonly a deeper shade of yellow. It is viscid; its specific gravity at 77° is 0.9575, according to Saussure. Its taste and smell are very slight. It may be mixed in all proportions with alcohol and ether, thus presenting a remarkable difference from other fixed oils. East Indian castor oil is the principal kind used in this country. It is imported from Bombay and Calcutta, and is of excellent quality. A very fine variety is imported from New York.

OLEUM ROSÆ. *Attar or otto of roses.*

Obtained in the East by distilling roses with water. The attar concretes and floats on the distilled water when cold. Several varieties of the rose are used, as *Rosa damascena* in Northern India, *Rosa moschata?* in Persia, *Rosa centifolia* in England. Polier says that in a very favourable season 100lbs. of rose leaves will yield about three drachms of attar, if the operation is carefully conducted. It fuses between 84° F. and 86° F. Its sp. gr. at 90° F is 0.832. At 57° F. 1000 parts of alcohol (sp. gr. 0.806) dissolve 7 parts, and at 72° F. 33 parts of attar. It is usually almost colourless, but Polier says, colour is no criterion of its quality.

OLEUM ROSACEUM. *Oleum rosæ. Oil of roses by infusion.*

Rose petals, not fully blown, picked, heeled, and beat to a pulp, 4 oz., olive oil 1 pint; expose to the sun for a week, press out the oil; repeat the process with fresh roses, then strain the oil for use.

OLEUM ROSMARINI. *Oleum anthos. Oil of rosemary.*

Is prepared by submitting the tops of rosemary (*Rosmarinus officinalis*) to distillation with water. It is transparent and colourless, with the odour of rosemary, and a hot aromatic taste. Its specific gravity is 0.897; it boils at 365° F. It is composed, according to Kane, of C^{45} H^{38} O^{2}. One pound of the fresh herb yields about one drachm of the oil. It is seldom taken internally, though not unfrequently used externally in conjunction with other substances as a stimulating liniment.

OLEUM RUTÆ. *Oil of rue.*

Obtained by submitting the herb (*Ruta graveolens*) to distillation with water. From 12lbs. of the leaves gathered before the plant had flowered, Lewis obtained only about ʒiij of oil; but the same quantity of herb with the seeds almost ripe yielded above ℥j. It is pale yellow, has a bitterish acrid taste and powerful odour, and a specific gravity of 0·911. It is somewhat more soluble in water than the other volatile oils, and is stimulant, antispasmodic and emmenagogue.

OLEUM SABINÆ. *Oil of Savin.*

Is obtained by submitting the fresh tops of Juniperus sabina, to distillation with water. It is a limpid, almost colourless liquid, having the unpleasant odour of the plant and a bitter acrid taste. Its specific gravity is 0·915. It is isomeric with oil of turpentine, being composed of $C^{10} H^8$. It has emmenagogue properties.

OLEUM SALVIÆ. *Oil of sage.*

Prepared by distillation with water from sage (*Salvia officinalis*).

OLEUM SAMBUCI. *Oleum sambuci viride. Oleum viride. Oil of elder. Green elder oil.*

Elder leaves fresh lbj, olive oil 2 pints, boil till the leaves are crisp; press out the oil, and let it settle. It is emollient.

OLEUM SANTALI. *Oleum santali albi. Oil of sandal wood.*

Prepared by distillation with water from sandal wood (*Sirium myrtifolium*) 1lb yields 2 drachms. Said to be sometimes sold for oil of rhodium and oil of roses.

OLEUM SASSAFRAS. *Oleum lauri sassafras. Volatile oil of sassafras. Oil of sassafras.*

Obtained by submitting the wood to distillation with water. It is colourless, but when kept becomes yellow or red. Its smell is that of sassafras, its taste hot. It has a specific gravity of 1·094. Water separates it into two oils, one lighter, the other heavier, than water. It is stimulant and diaphoretic. Nitric acid renders it orange red.

OLEUM SCORPIONUM. *Oil of Scorpions.*

Formerly procured by digesting scorpions in oil, and exposing them to the sun. Said to be diaphoretic and externally emollient.

OLEUM SERPYLLI. *Huile de tain. Oil of lemon thyme.*

Obtained by distilling *Thymus serpyllum* with water. 100lbs of the fresh herb yields about 2½oz. Used to scent soaps.

OLEUM SESSAMI. *Gingelli oil. Benne oil.*

Obtained by expression from the seeds of *Sesamum orientale.* It is inodorous, of a bland sweetish taste, and will keep very long without becoming rancid. It bears some resemblance to olive oil in its properties, and may be used for similar purposes. It was known to the ancient Persians and Egyptians, and is highly esteemed by the modern Arabs and other people of the East, both as food, and as an application to promote softness of the skin. It has been sometimes substituted in England for oil of almonds.

OLEUM SINAPIS. *Oil of mustard.*

This oil is expressed from the seeds of the *Sinapis alba* and *nigra*. Those of the white mustard give about 36 per cent. and those of the black about 18 per cent. of their weight of oil. It has an amber colour, is destitute of smell, and is thicker than olive oil. The specific gravity of the oil from the black mustard is 0·9170, and that from white mustard 0·9142 at 59°. It dissolves in 4 times its weight of ether, and in 1000 times its weight of alcohol of 0·833. It makes an excellent soap.

OLEUM SINAPIS VOLATILUM. *Volatile oil of mustard.*

May be obtained by submitting to distillation, the crushed seeds of *Sinapis alba* or *nigra* with water. It does not exist ready formed in the seeds, but is produced by the action of the water in the same manner as the volatile oil of almonds. It is pale yellow or colourless; it has a most penetrating odour and a most acrid burning taste. Its specific gravity at 68° F. is 1·015. It boils at 290 F. It is slightly soluble in water, but readily so in alcohol or ether. It consists of $C^{32} H^{20} N^4 O^5 S^5$. It is powerfully acrid, rubefacient, and vesicant; and has been proposed as a rubefacient in paralysis, and as a vesicant.

OLEUM SPICÆ. *Oleum spicæ verum. Oleum stœchadis. Oil*

of spike. True oil of spike. Foreign oil of lavender.

Obtained by distillation with water from *Lavandula spica.* This oil is distinguished from the genuine oil of *Lavandula vera* by its darker green colour, and its less grateful odour. It is used by painters on porcelain, and by artists, in the preparation of varnishes.

Oil of turpentine coloured with alkanet root is frequently sold under this name.

OLEUM SUCCINI. *Oleum succini rectificatum. Oil of amber.*

For the preparation of this oil, the London College directs, amber to be put into an alembic, so that an acid liquor, an oil, and a salt contaminated with the oil, may distil in a sand bath, with a heat gradually raised. Afterwards let the oil distil again, and a third time. Volatile oil of amber, when fresh drawn, has a pale yellowish colour, which deepens by age ; and a strong and remarkable odour. Scrapings of copal and the resin dammar are frequently substituted for genuine amber in the distillation, and the oil thus obtained is scarcely distinguishable from the genuine. Oil of amber is a powerful local irritant, and is sometimes employed in liniments, in rheumatism, and paralysis. Mixed with olive oil it is applied to the chest in hooping cough.

OLEUM SULPHURATUM. *Balsamum sulphuris. Sulphurated oil. Balsam of sulphur.*

Is prepared by heating one part of sublimed sulphur in eight parts of olive oil. It is a dark reddish-brown viscid substance, having an extremely unpleasant odour. It is acrid and stimulant, and has been supposed to possess expectorant and diaphoretic properties.

OLEUM TABACÆ VOLATILUM. *Nicotianin. Concrete volatile oil of tobacco. Tobacco-camphor.*

Obtained by submitting the leaves of *Nicotiana tabacum* with water to distillation. Six pounds of the leaves yielded eleven grains of the oil, which floated on the surface of the liquor. It is solid, has the odour of tobacco and a bitter taste. It is insoluble in water, but soluble in ether. According to Landerer, it does not exist in fresh tobacco leaves, it would therefore appear to be formed by the action of air and water during drying. It excites in the tongue and throat a sensation similar to that caused by the smoke, and if swallowed causes giddiness, nausea and sickness; applied to the nose it causes sneezing. This must not be confounded with *nicotine* or *nicotina,* the volatile alkaloid, which is obtained by distilling tobacco with caustic potash.

OLEUM TANACETI. *Volatile oil of tansy.*

Is obtained by distillation from the leaves of *Tanacetum vulgare.* It is yellow, or sometimes green. It has the peculiar odour of the plant, and a warm, bitter taste. Its specific gravity is 0·952.

OLEUM TEMPLINUM. *Krumholz oil.*

Prepared by distillation from Hungarian balsam.

OLEUM TEREBINTHINÆ. *Spiritus terebinthinæ. Oil of turpentine. Spirits of turpentine.*

Is obtained by submitting to distillation a mixture of American turpentine (which has been melted and strained) and water, in due proportions. The distilled product is found to consist of oil of turpentine swimming on water. If no water be employed, a much higher temperature is required to effect the distillation. American turpentine yields about from 14 to 16 per cent., the residue being resin. Pure oil of turpentine is colourless, limpid and very inflammable, and is neutral to test paper ; its specific gravity is 0·86 at 70° F. It boils at 314° the density of its vapour is 4·76 (Dumas). It is composed of $C^{10} H^{8}$.

OLEUM THEÆ. *Oil of tea.*

This oil is much used in China, for burning in lamps, and as an article of food. It is expressed from the seeds of *Camellia sesangua*, and *oleifera*, and probably from other species, but there is no evidence of its being ever obtained from the seeds of *Thea*.

OLEUM TOULOUCOUNÆ. *Touloucouna oil.*

A thick butyraceous oil obtained from the fruit of the *Carapa touloucouna*, an inhabitant of Senegal. The oil has a rancid smell, and a bitter, hot, and very disagreeable taste. It excites vomiting, and is used by the natives for anointing the skin, and applying to childrens' heads to destroy vermin.

OLEUM DE TRIBUS. *Oil of three ingredients.*

Van Mons.

℞ Spirit of turpentine,
Oil of lavender,
Oil of brick, āā . equal parts.
Mix.

OLEUM TRITICI. *Oil of wheat.*

Obtained by pressing bruised wheat between hot iron plates. The Colne wheat yields it most abundantly. It has been recommended as an application in *tinca capitis*.

OLEUM E VITELLIS OVARUM. *Oil of yolk of eggs.*

Obtained by boiling eggs hard, heating the yolks, first broken in two or three pieces each, in a frying pan, over the fire, till the oil begins to exude from them, and then pressing them with great force; fifty eggs yield about 5oz. of oil. Old eggs yield the greatest quantity. It may also be obtained by treating the boiled yolks with ether, and evaporating the ethereal solution.

OLEUM VITIS VINIFERÆ LAPIDUM. *Oil of raisin-stones.*

This oil is extracted from the stones of raisins (the fruit of *Vitis vinifera*). It is of a yellow colour, but darkens by age. It is insipid and has no smell. It freezes at 2° F. Its specific gravity is 0·9202, at 60°. It is of little use for lighting, but in some localities is used with provisions.

OLEUM VALERIANÆ. *Oil of valerian root.*

Obtained by distilling valerian root with water.

OLEO-SACCHARUM. *Elæosaccharum.*

A mixture of essential oils with sugar. Preparations of this kind are occasionally used, but in this country they are extemporaneously ordered.

OPIUM. The concrete milky juice of the unripe capsules of the poppy (*Papaver somniferum*). The principal active constituent of opium is *Morphia*, which is in combination with meconic acid, and it is said, sometimes with sulphuric acid.

There are several varieties of opium, of which the following are the principal:—

European opium. Opium has been made in England, France, and Germany, but these varieties are only occasionally met with in commerce. Some samples of *English opium* have been found to be fully equal to any that is made.

Egyptian opium. In roundish flattened cakes about three inches in diameter, covered with fragments of leaves. In its fracture it has a reddish colour, and it does not blacken with keeping. It differs much in quality, and is considered inferior to the Turkey varieties.

Indian opium. There are three kinds of Indian opium, distinguished as *Benares opium*, *Malwa opium*, and *Patna opium. Benares opium* is in balls weighing about three or four pounds each, thickly coated on the outside with poppy petals agglutinated together. *Malwa opium* is in round or flattened cakes weighing about ten ounces. Its colour is dark brown. *Patna opium*, is either in round or in square cakes. The former are similar to those of Benares opium; the latter is called *Garden Patna opium*; the cakes are about three inches square.

Indian opium is inferior to Turkey opium. It is, however, the kind principally used in China.

Persian opium. Trebizon opium. This variety is not generally met with in commerce. It is in the form of cylindrical sticks, about six inches long and half an inch in diameter, covered with paper. Its colour and appearance are similar to those of hepatic aloes.

Turkey opium. There are two varieties of opium brought from Turkey;—*Constantinople opium*, and *Smyrna* or *Levant opium. Constantinople opium* is considered inferior to the *Smyrna* variety. It is generally in small, flattened regular cakes, from two to two and a half inches in diameter, and covered with a poppy leaf. It is more mucilaginous than Smyrna opium, and may be distinguished from that by the absence of the rumex capsules, with which Smyrna opium is generally covered. *Smyrna* opium is esteemed the best variety. It is in irregular, rounded, or flattened pieces, varying in weight from two pounds downwards. The masses are almost always covered with the reddish capsules of a species of rumex. When first imported the pieces are soft, and, when cut, of a reddish-brown colour; but by keeping they become hard and nearly black.

ORANGEADE. A sweet acidulous drink, prepared with oranges, in a similar way to that for making lemonade.

OXYMEL. *Oxymel.*

Lond. Ph. 1836.

℞	Honey (despumated) . .	lbx.
	Acetic acid . . .	Oiss.

Mix the acid with the honey made hot.

Dubl. Ph. 1826.

℞	Honey, *by weight* . .	lbij.
	Distilled vinegar . .	Oj.

Boil them in a glass vessel, with a slow fire, to the thickness of a syrup, removing the scum.

Med. use. As the basis of detergent gargles, and of expectorant remedies.

OXYMEL COLCHICI. *Oxymel of meadow saffron.*

Dubl. Ph. 1826.

℞	Fresh bulb of meadow saffron, cut into thin slices .	℥j.
	Distilled vinegar	Oj.
	Clarified honey, *by weight*	lbij.

Macerate the meadow saffron with the vinegar in a glass vessel for two days; to the liquor, strongly expressed from the root and filtered, add the honey, and then boil down the mixture to the consistence of a syrup, frequently stirring it with a wooden rod.

Med. use. Expectorant and diuretic, and used in gout, dropsy, and asthma. *Dose*, ʒi to ʒij.

OXYMEL SCILLÆ. *Oxymel of squill.*

Lond. Ph. 1836.

℞	Honey (despumated)	lbiij.
	Vinegar of squills	Oiss.

Boil down in a glass vessel, with a slow fire, to a proper consistence.

Dubl. Ph. 1826.

℞	Despumated honey	lbiij.
	Vinegar of squill	lbij.

Boil in a glass vessel, over a slow fire, until reduced to the consistence of a syrup.

OXYSACCHARUM DIGITALIS. *Oxysaccharum of digitalis.*

Soubeiran, 1840.

℞	Dry digitalis	1 part.
	Distilled vinegar	8 parts.

Digest by a gentle heat, strain with expression; add

	Sugar	10 „

Dissolve the sugar and filter.

This preparation has been extolled by Martius in the treatment of pulmonary phthisis.

PALLADIUM. *Symb.* Pd. *Æquiv.* 54.

A metal, in many of its characters resembling platinum, with which it is found associated. It is not used in medicine. Its principal consumption is by the dentists, who use it in fixing artificial teeth, as a substitute for gold.

PANACEA ANTIMONII. *Panacea of antimony.*

℞	Black sulphuret of antimony	℥vj.
	Nitre	℥x.
	Common salt	℥iss.
	Charcoal	℥j.

Mix together, in powder, and project it into a red hot crucible; keep it in the fire for a quarter of an hour, then allow the crucible to cool, break it, separate and reject the upper stratum or scoria, and powder and wash the other part. When washed it should be of a fine golden colour. This is said to be the basis of *Lockyer's pills.*

PASTA ALTHÆÆ. *Pasta gummi. Pate de guimauve. Pate de gomme. Marshmallow paste. Gum arabic paste.*

1.

℞	Decorticated marshmallow root	℥iv.
	Water	Oiv.
	Best gum arabic	lbiiss.
	White sugar	lbiiss.
	Orange flower water	℥iv.
	Whites of 12 eggs.	

2.

℞	Gum arabic,	
	White sugar, āā	lbij.
	Water	℥viij.
	Orange flower water	℥ij.
	Whites of 6 eggs.	

Dissolve the gum and sugar in the water, by the heat of a water-bath.

Macerate the root in the water for 12 hours; strain, and add to the clear liquor the gum and sugar, and evaporate to the consistence of honey, then add the albumen beaten up with the orange flower water; evaporate until it forms a firm paste on being poured on to a marble slab.

Beat up the albumen with the orange flower water, add it to the solution, and evaporate the mixture to the proper consistence.

PASTA AMYGDALARUM. *Almond paste.*

As a sweet-meat.

℞ Sweet almonds, blanched,	
White sugar,	
Gum arabic, āā . .	lbj.
Water . . .	lbiij.
Cherry-laurel water .	℥j.
Whites of 6 eggs.	

Beat the almonds into a fine paste with the sugar and some of the water, then add the remainder of the water so as to form an emulsion; add the gum to the emulsion and dissolve it with heat; evaporate the mixture to the consistence of honey; add the white of egg beaten up with the cherry-laurel water; concentrate it to the proper consistence, then pour it on to a marble slab and cut it into squares.

As a cosmetic, for the hands, &c.

1.

℞ Sweet almonds, blanched .	lbiss.
Rice powder,	
Orris root powder, āā .	℥iv.
Spermaceti . .	℥ss.
Oil of almonds . .	℥ij.
Windsor soap . .	℥ij.
Oil of bitter almonds .	ʒj.
Oil of bergamot . .	ʒiij.
Otto of roses . .	ʒss.
Rose water . .	q. s.

Beat the almonds into a paste with the rice powder, orris powder, and a sufficient quantity of rose water. Melt the spermaceti, oil of almonds, and soap together, and beat up with the other ingredients so as to form a paste.

2.

℞ Sweet almonds, blanched .	lbss.
Bitter almonds, ditto .	℥j.
Best honey . .	℥ij.
Orris root powder . .	℥j.
Rice powder . .	℥ij.
Eau de Cologne, q. s. to form a paste.	

PASTA DACTYLIFERÆ. *Pâte de dattes. Date paste.*

℞ Date fruit, freed from the stones .	℥iij.
Gum arabic . . .	℥xij.
White sugar	℥x.
Orange flower water . . .	℥j.

Boil the dates in ℥xij of water; strain and press; add the sugar to the liquor, and the white of an egg beaten up; heat it until coagulation takes place, then carefully strain it. Dissolve the gum in a sufficient quantity of water, strain it, mix the two solutions together, and evaporate the mixture to the proper consistence.

PASTA GLYCYRRHIZÆ. *Pate de reglisse.* *Liquorice paste.*

Brown liquorice paste.

Codex.

℞ Extract of liquorice, or Italian juice	℥iij.
Gum arabic	℥xlviij.
White sugar	℥xxxij.
Extract of opium	gr. xv.
Water	Oiv.

Dissolve the liquorice in the water, strain the solution, add the other ingredients and evaporate to the proper consistence.

White liquorice paste,

is made as above, substituting decorticated liquorice root for the extract.

Black liquorice paste.

Codex.

℞ Extract of liquorice, or Italian juice	lbj.
Gum arabic	lbij.
White sugar	lbj.
Water	lbiv.

Dissolve the liquorice in the water, strain the solution, add the gum and sugar, and evaporate to the proper con. sistence. It may be flavoured by adding 24 drops of oil of aniseed and ʒj of orris powder.

PASTA JUJUBÆ. *Pate de jujubes.* *Jujube paste.*

Codex.

℞ Jujube fruit	lbj.
Gum arabic	lbvj.
White sugar	lbv.
Orange flower water	℥vj.
Water	q. s.

Boil the jujubes for half an hour in lbiv of water, strain, press, and afterwards decant the clear liquor and clarify it with the whites of three or four eggs. Dissolve the gum in lbviij of water and strain the solution. Mix the two liquors, add the sugar, evaporate the mixture to a thick consistence, then add the orange flower water, and complete the evaporation by the heat of a water-bath, and finally in a stove at 104° Fahr.

PASTA LICHENIS. *Pate de Lichen.* *Lichen paste.*

Codex.

℞ Iceland moss	lbj.
Gum arabic	lbv.
White sugar	lbiv.

Heat the moss with a sufficient quantity of water nearly to the boiling point, strain, and reject the liquor; then boil the moss in a fresh portion of water for an hour; strain and press; add the sugar and gum to the decoction, and evaporate it by a gentle heat until reduced to the proper consistence.

PASTA PECTORALIS. *Pate pectorale de Baudry.* *Pectoral paste of Baudry.*

℞ Gum arabic	lbix.
White sugar	lbviss.
Extract of lettuce	ʒij.
„ of liquorice	ʒx. gr. xx.
Balsam of Tolu	ʒx. gr. xx.
Orange flower water	℥ivss.
Essence of citron	gtt. iv.
Whites of 4 eggs,	
Water	q. s.

Misce secundum artem.

PASTA PECTORALIS BALSAMICA. *Pate pectorale balsamique de Regnault. Regnault's pectoral paste.*

℞ Flowers of mallow (*Malva sylvestris or glabra*)	
„ Cudweed (*Gnaphalium luteo album or sylvaticum*)	
" Coltsfoot (*Tussilago farfara*)	
„ Red-poppy (*Papaver rhœas*) āā .	℥j.

Boil in a quart of water and strain, then add

Gum arabic	℥xxx.
White sugar	℥xx.
Tincture of Tolu	ʒij.

Dissolve, strain, and evaporate to the proper consistence.

PASTA TORMENTILLÆ. *Paste of tormentilla.*

℞ Powdered tormentilla root . .	q. p.
White of egg, q. s. to form a paste.	

Applied on linen, for *whitloe.*

PASTILLI FUMANTES. *Fumigating pastilles. Aromatic pastilles.*

1.

Wirtemb. Ph.

℞ Benzoin,	
Dry balsam of Peru, āā .	16 parts.
Yellow sandal wood .	4 „
Labdanum . .	1 part.
Charcoal from lime-tree wood . .	96 parts.
Nitrate of potash ,	2 „
Mucilage of Tragacanth	q. s.

Mix and form into conical pastilles.

2.

℞ Charcoal, coarsely powdered	lbj.
Cascarilla bark, powdered .	℥iv.
Benzoin, ditto. .	℥ij.
Yellow sandal wood .	℥ss.
Myrrh . . .	℥j.
Musk . . .	gr. x.
Oil of cloves . .	ʒj.
Nitrate of potash . .	℥ij.
Mucilage of tragacanth .	q. s.

Mix and form into pastilles.

3.

℞ Charcoal, in coarse powder .	lbj.
Cascarilla bark . .	℥iv.
Benzoin,	
Myrrh,	
Camphor,	
Nitrate of potash, āā .	℥j.
Mucilage of tragacanth .	q. s.

Mix and form into pastilles.

4.

℞ Charcoal, in coarse powder .	lbj.
Cascarilla bark . .	℥ij.
Yellow sandal wood .	℥ss.
Mastic,	
Olibanum,	
Opoponax,	
Storax, āā . . .	℥j.
Benzoin . . .	℥ij.
Mucilage of tragacanth .	q. s.

Mix and form into pastilles.

PARAGUAY ROUX.

℞ Leaves and flowers of *Inula bifrons* .	℥j.
Flowers of Para saxifrage . .	℥iv.
Root of pellitory of Spain . .	℥j.
Rectified spirit	℥viij.

Macerate for fourteen days, then strain, press, and filter.

PATCHOULI. *Patchoulie. Puchá pât.*

The dried foliaceous tops of an odoriferous plant, imported from India, and used by the perfumers, principally for making *sachets.* The plant is supposed to belong to the family Labiatæ.

PAULLINIA. *Guarana.* A powder prepared from the seeds of *Paullinia sorbilis*, a native of South America. *Guarana* is used in France as a tonic and astringent. It has been found to contain a crystalline substance resembling, if not identical with, *caffein*. A description and analysis of this substance is given in the *Journal de Pharmacie* for 1840, vol. xxvi.

PEPPER, SOLUBLE CAYENNE.

1.

Digest lbj of the best Cayenne pepper with Oj of rectified spirit, at a gentle heat, for two days; then put it into a percolating apparatus and displace the tincture. Add the tincture to lbj of common salt, rub them together in a mortar, add sufficient arnotto to give the mixture the proper colour when dry, and finally dry it in a stove at a temperature about 120°. When dried it should be rubbed through a coarse sieve.

2.

Treat lbj of Cayenne pepper with spirit as described above. Mix the alcoholic tincture with an equal volume of a saturated aqueous solution of common salt, in an oil separater, and separate the oil which floats on the surface. Boil the marc, left from the alcoholic tincture, with Oij of water, strain the decoction, and evaporate it to the consistence of syrup; mix this syrupy extract with lbij of common salt, dry the mixture over a water-bath, colour it with arnotto, rub it through a coarse sieve to separate the grains, and then intimately mix it with the oil separated from the alcoholic tincture.

The spirit may be recovered by distillation, from its admixture with the solution of salt.

PEWTER. An alloy of tin and lead; or of tin, with antimony, bismuth, copper, &c.

1.

℞	Tin . . .	82 parts.
	Lead . . .	18 „

If a larger proportion of lead than this is present, the pewter will be acted on by even weak acetic acid.

2.

Trifle.

℞	Tin . . .	83 parts.
	Antimony . .	17 „

3.

Plate pewter.

℞	Tin . . .	100 parts.
	Antimony . .	8 „
	Bismuth . .	2 „
	Copper . .	2 „

4.

Britannia metal, No. 1.

℞ Tin,
Brass,
Antimony,
Bismuth, āā . . p. æ.

5.

Britannia metal, No. 2.

℞	Tin . . .	82 parts.
	Lead . . .	18 „
	Antimony . .	5 „
	Brass . . .	5

This forms an excellent alloy for teapots, &c.

PHLORIDZINE.

A crystalline body obtained from the bark of the roots of apple, pear, or plum trees.

Boil the bark of the roots of the apple, pear, or plum tree, in distilled water, decolourize the decoction with oxide of lead, remove any lead that may remain in solution by sulphuric acid and sulphuret of barium, evaporate the clear liquor to a syrupy consistence, and let it stand that crystals may be formed. These crystals are impure phloridzine, which may be purified by solution, treatment with animal charcoal, and recrystallization.

It has been administered as a febrifuge.

PHOSPHORUS. *Symb.* P. *equiv.* 16 or 31·44.

This is one of the constituents of bones, and from this source it is generally obtained.

Add lbviij of oil of vitriol diluted with twice its volume of water to lbxij of calcined bones; let the mixture stand for two or three days, frequently stirring it. Add water to the mixture, and separate the solution from the insoluble sulphate of lime. Evaporate the solution to a syrupy consistence, mix it with lbj of powdered charcoal, and dry the mixture in an iron vessel over the naked fire. The dry powder is to be put into a stone-ware retort furnished with a wide tube dipping into cold water, and the strong heat of a furnace applied. The phosphorus will distil over, and drop into the water.

PHOSPHORUS PASTE, for destroying, rats, mice, &c.

℞	Phosphorus	8 parts.
	Water, lukewarm	180 ,,
	Rye meal	
	Butter or lard, āā	180 ,,
	Sugar	125 ,,

Liquefy the phosphorus in the lukewarm water, and mix it in a mortar with the rye meal; when cold, add the butter and the sugar, and mix them all thoroughly together. The mixture may be more completely ensured if the phosphorus be first reduced to a state of minute division, by liquefying it in warm water in a bottle, and shaking the bottle until it has become cold, and then mixing the finely divided phosphorus with the other ingredients.

It is said that rats and mice will eat with avidity this composition, which should be laid for them in small balls.

CANTONS PHOSPHORUS.

Mix 3 parts of calcined oyster-shells, and 1 part of sulphur, put the mixture into a covered crucible, and heat it strongly for about an hour. This substance becomes phosphorescent in the dark, after being exposed for some time to the sunshine.

PICKLE. (*Pikel*, Dutch.)

A liquor in which animal or vegetable substances are preserved. The term is most frequently applied to the fruit or other parts of vegetables preserved in vinegar, or vinegar and salt.

The process of pickling usually consists in depriving the substances to be pickled of their watery juices, where these exist to any extent; in coagulating the albumen, if present; and then covering the substances with some liquid capable of preserving their flavour, and preventing decomposition. The following solutions are used in the process:—

Brine.

1.

℞	Common salt . .	℥viij.
	Water . . .	Oij.

Dissolve.

2.

℞	Common salt . .	℥xij.
	Water . . .	Oij.

Dissolve.

Pickle.

1.

℞	Strong distilled vinegar .	Oij.
	Common salt . .	℥jss.
	Black pepper } . .	ʒij.
	Ginger, whole . .	ʒiss.
	Mace . . .	ʒj.

Boil for a few minutes, and strain.

2.

℞	Strong distilled vinegar .	Oij.
	Common salt . .	℥j.

Dissolve.

Pickled barberries.

Put the ripe fruit of the barberry into stone jars, or wide mouth green glass bottles, and cover them with *Brine* No. 1, or with *Pickle* No. 2, without applying heat.

Pickled cauliflower or broccoli.

Put the cauliflower or broccoli into a sufficient quantity of *Brine* No. 1, and gradually heat it over the fire until it boils, then pour off the liquor, drain, and dry the vegetables before the fire, put them into a jar, and cover them with *Pickle* No. 1, boiling hot.

Pickled cherries.

Put the cherries, not quite ripe, into stone jars or bottles, and cover them with very strong distilled vinegar, cold.

Pickled eschalots.

Boil a sufficient quantity of *Pickle* No. 1; while boiling put in the eschalots, and simmer them for two minutes, then pour them into a stone jar, and when cold, cover them over.

Pickled gherkins.

Put the gherkins into a jar and pour over them enough of *Brine* No. 1, boiling hot, to cover them; let them stand for a day, then pour off the brine and wipe the gherkins separately; put them again into the jars, and cover them with *Pickle* No. 1, boiling hot; cover the jar with a plate and let it stand for two days, then heat the liquor again to the boiling point, and pour it over the fruit as before. Let it stand until cold, then cover the jar over.

Sliced cucumbers, *French beans*, and *capsicums*, may be pickled in the same way as *gherkins*.

Pickled limes or lemons.

Take fine sound fruit and slit them half down in four quarters, but not through to the core; put as much salt as they will hold into the incisions, and expose them on a dish, in the sun, for eight or ten days, frequently turning them, and basting them with the liquor that runs out. Rub some powdered turmeric on the surface of each; put them, together with the juice that has exuded, and some whole capsicums, into a stone jar, and cover them with *Pickle* No. 1, boiling hot. Let them stand till cold, and then cover them over.

Pickled mushrooms.

Put small *button* mushrooms, recently

gathered, into a jar and pour over them *Pickle* No. 1, in a sufficient quantity to cover them. Let them stand for a day, then re-boil the liquor and again pour it over them.

Pickled nasturtiums.

Put the fruit of the nasturtium, unripe, into jars or bottles, and cover them with *Pickle* No. 2, cold.

Pickled onions.

Select the smallest onions, peel them, and then proceed as directed for eschalots.

Pickled peaches.

Put the peaches, not quite ripe, into *Brine* No. 2; let them remain there for three days, then take them out and drain them; put them into a jar and pour *Pickle* No. 1, boiling hot, over them. After two months they will be fit for use.

Pickled walnuts.

Prick the fruit with a pin or sharp-pointed instrument in several places; put them on a dish and sprinkle salt over them, expose them to the sun for a week or ten days, turning them every day, and basting them with the liquor that runs out. Then put them into a jar together with the liquor, and cover them with *Pickle* No. 1, boiling hot.

Piccalili. Indian pickle.

Take a hard white cabbage sliced, two cauliflowers pulled to pieces, a stick of horseradish cut in slices, two dozen small onions, cover them with *Brine* No. 1, boiling hot; let them stand for 24 hours, then pour off the liquor, and add an equal quantity of *Pickle* No. 1, boiling hot, together with ℥j of turmeric and ʒj of mustard in powder; let them stand for two days, then mix them with a quantity of pickled cucumbers, gherkins, French beans, and capsicums, and enough *Pickle* No. 1 to cover them.

PICKLE FOR MEAT.

1.

℞	Bay salt	lbiij.
	Saltpetre	℥ij.
	Brown sugar	lbij.
	Black pepper	℥ij.
	Water	cong. ij.

Boil for 20 minutes.

2.

℞	Common salt	lbvj.
	Bay salt	lbij.
	Saltpetre	℥ij.
	Coarse sugar	lbij.
	Water	cong. iij.

Dissolve with heat.

These pickles are well adapted for preserving tongues, beef, hams, &c., the flavour of which they improve.

PICROTOXINE. The active principle contained in the fruit of *cocculus indicus.*

PILULÆ ALOES. *Pills of aloes.*

Edin. Ph. 1841.

℞	Socotorine aloes,	
	Castile soap, āā	equal parts.
	Conserve of red roses	q. s.

Beat them into a proper pill-mass. This pill may be also correctly made with the finer qualities of East Indian aloes, as the socotorine variety is very scarce; and many, not without reason, prefer the stronger Barbadoes aloes.

PILULÆ ALOES COMPOSITÆ. *Compound pills of aloes.*

Lond. Ph. 1836, and Dubl. Ph. 1826.

℞	Aloes, powdered	℥i.
	Extract of gentian	℥ss.
	Oil of caraway	♏xl.
	Syrup	q. s.

Beat them together until incorporated.

Med. use. These pills are laxative, and well suited to obviate costiveness. *Dose*, grs. x. to grs. xv.

PILULÆ ALOES ET ASSAFŒTIDÆ. *Pills of aloes and assafœtida.*

Edin. Ph. 1841.

℞	Aloes (Socotorine or East Indian)	
	Assafœtida,	
	Castile soap, āā	equal parts.

Beat them with conserve of red roses into a proper pill mass.

Med. use. Purgative and antispasmodic. *Dose*, gr. x.

PILULÆ ALOES CUM MYRRHA. *Pills of aloes with myrrh.* L. D. *Rufus pill.*

Lond. Ph. 1836, and Dubl. Ph. 1826.

℞	Aloes	℥ij.
	Saffron,	
	Myrrh, āā	℥j.
	Syrup	q. s.

Rub the aloes and myrrh separately to powder; then beat the whole together until incorporated.

Edin. Ph. 1841. *Pilulæ aloes et myrrhæ.*

℞	Aloes (Socotorine or East Indian)	4 parts.
	Myrrh	2 parts.
	Saffron	1 part.

Beat them into a proper mass with a sufficient quantity of conserve of roses.

PILULÆ ALÖES DILUTÆ. *Diluted aloes pills.*

Dr. Marshall Hall.

℞	Barbadoes aloes,	
	Castile soap,	
	Extract of liquorice,	
	Treacle, āā	p. æ.

Dissolve them in water, strain, and evaporate to a proper pilular consistence.

PILULÆ ALOES CUM MASTICHE. *Aloes and mastic pills. Lady Hesketh's dinner pills. Lady Crespigny's pills. Lady Webster's pills.*

1.

℞	Aloes	ʒvj.
	Mastic, powdered,	
	Red roses, powdered, āā	ʒij.
	Syrup of wormwood	q. s.

Make a pill-mass and divide it into pills of three grains each.

2.

℞	Aloes	℥vj.
	Mastic	ʒij.
	Soap	℥ss.
	Water	f℥ss.

Mix together in a heated iron mortar until incorporated, then divide into pills of three grains each.

The following substitute for the above is given under the title of

Pilulæ dictæ antecibum.

Codex.

℞	Aloes	ʒvj.
	Extract of bark	ʒiij.
	Powdered cinnamon	ʒj.
	Syrup of wormwood	q. s.

Mix to form a pill-mass.

PILULÆ ARSENICI. *Pilulæ asiaticæ. Pills of arsenic. Tanjore pills.*

Codex.

℞	Arsenious acid	gr. j.
	Black pepper, powdered	gr. xij.
	Gum arabic, powdered	gr. ij.
	Water	q. s.

Mix, and form into 12 pills.

PILULÆ ASSAFŒTIDÆ. *Assafœtida pills.*

U. S. Ph, 1840.

℞	Assafœtida	℥iss.
	Soap	℥ss.

Beat them with water so as to form a mass, to be divided into 240 pills.

Ed. Ph. 1841.

℞	Assafœtida,	
	Galbanum,	
	Myrrh, āā	3 parts.
	Conserve of red roses or, q. s.	4 parts.

Mix them, and beat them into a proper pill-mass.

Med. use. A good pill in hysterical affections. *Dose,* grs. x., twice or thrice a day.

PILULÆ CAMBOGIÆ COMPOSITÆ. *Compound gamboge pills.*

Lond. Ph. 1836, and Dubl. Ph. 1826.

℞	Camboge, powdered	ʒj.
	Aloes, powdered	ʒiss.
	Ginger, powdered	ʒss.
	Soap	ʒij.

Mix the powders together; afterwards, the soap being added, beat the whole together until incorporated.

PILULÆ CAMBOGIÆ. *Gamboge pills.*

Edin. Ph. 1841.

℞	Gamboge,	
	East Indian or Barbadoes aloes,	
	Aromatic powder, āā	1 part.
	Castile soap	2 parts.

Pulverize the gamboge and aloes separately, mix all the powders, add the soap, and then a sufficiency of syrup; beat the whole into a proper pill-mass.

Med. use. These pills purge briskly. *Dose,* ten grains.

Pilulæ cocciæ. (*from* κοκκια, *pills.*)

1.

Lond. Ph. 1773. *Pilulæ ex colocynthide cum aloë.*

℞ Socotorine aloes,	
Scammony, āā	℥ij.
Pulp of colocynth	℥j.
Oil of cloves	ʒij.
Syrup of buckthorn	q. s.

Mix to form a pill-mass.

This is a very old formula, having been ascribed by the committee of the College in 1773, to Galen. In the earliest Pharmacopæias there were two formulæ, one for *Pilulæ cocciæ majores,* the other for *Pilulæ cocciæ minores;* the above formula corresponds with the latter of these two.

2.

℞ Cape aloes	lbij.
Pulp of colocynth,	
Jalap,	
Soap, āā	lbj.
Oil of cloves	℥j.
Syrup	q. s.

Mix to form a pill-mass.

3.

The same as the above, but substituting socotrine for Cape aloes.

Pilulæ colocynthidis. *Colocynth pills.*

Edin. Ph. 1841.

℞ Socotorine, or East Indian aloes,	
Scammony, āā	8 parts.
Colocynth	4 „
Sulphate of potash,	
Oil of cloves, āā	1 part.
Rectified spirit,	q. s.

Pulverize the aloes, scammony, and sulphate of potash together; mix with them the colocynth previously reduced to fine powder; add the oil of cloves; and with the aid of a small quantity of rectified spirit beat the whole into a proper pill-mass; which is to be divided into five-grain pills.

Pilulæ colocynthidis compositæ. *Compound colocynth pills.*

Dubl. Ph. 1826.

℞ Hepatic aloes,	
Scammony, āā	℥j.
Pulp of colocynth	℥ss.
Castile soap	ʒij.
Sulphate of potash,	
Oil of cloves, āā	ʒj.
Treacle	q. s.

Reduce the aloes and scammony into a powder with the sulphate of potash; then mix together the colocynth pulp and the oil, and finally, rub all together into a mass with the soap and treacle.

Med. use. This is an excellent purgative pill in habitual costiveness. *Dose,* gr. v. to ℈i.

Pilulæ colocynthidis et hyoscyami. *Pills of colocynth and henbane.*

Edin. Ph. 1841.

℞	Colocynth-pill mass	2 parts.
	Extract of hyoscyamus	1 part.

Beat them well together, adding a few drops of rectified spirit, if necessary; and divide the mass into five-grain pills.

Med. use. A useful pill in case of irritable bowels.

Pilulæ conii compositæ. *Compound Pills of hemlock.*

Lond. Ph. 1836.

℞	Extract of hemlock	ʒv.
	Ipecacuanha, powdered	ʒj.
	Mixture of acacia	q. s.

Beat them together till incorporated.

Med. use. Antispasmodic—useful in hooping-cough. *Dose,* grs. v.

Pilulæ copaibæ. *Pills of copaiba.*

U. S. Ph. 1840.

℞	Copaiba	℥ij.
	Magnesia recently prepared	ʒj.

Mix them and set the mixture aside till it concretes into a pilular mass, which is to be divided into 200 pills.

Pilulæ cupri ammoniati. *Pills of ammoniated copper.*

Edin. Ph. 1841.

℞	Ammoniated copper, in fine powder	1 part.
	Bread-crumb	6 parts.
	Solution of carbonate of ammonia	q. s.

Beat them into a proper mass; and divide it into pills, containing each half a grain of ammoniated copper.

Med. use. Given in epilepsy and spasmodic diseases. *Dose,* one pill night and morning, to be increased gradually to four or five.

Pilulæ calomelanos et opii. *Pills of calomel and opium.*

Edin. Ph. 1841.

℞	Calomel	3 parts.
	Opium	1 part.
	Conserve of red roses	q. s.

Beat them into a proper mass, which is to be divided into pills, each containing two grains of calomel.

Pilulæ digitalis et scillæ. *Pills of foxglove and squill.*

Edin. Ph. 1841.

℞	Digitalis, Squill, āā	1 part.
	Aromatic electuary	2 parts.

Beat them into a proper mass with conserve of red roses, and divide the mass into four-grain pills.

Med. use. Diuretic. *Dose*, from one to two pills.

PILULÆ EX DUOBUS. *Pilulæ colocynthidis.*

Lond. Ph. 1773.

℞	Pulp of colocynth,	
	Scammony, āā	℥ij.
	Oil of cloves	ʒij.
	Syrup of buckthorn	q. s.

Mix and form a pill-mass.

PILULÆ FERRI CARBONATIS. *Pills of carbonate of iron.*

Edin. Ph. 1841.

℞	Saccharine carbonate of iron	4 parts.
	Conserve of red roses	1 part.

Beat them into a proper mass, to be divided into five-grain pills.

PILULÆ FERRI COMPOSITÆ. *Compound pills of iron.*

Lond. Ph. 1836.

℞	Myrrh, powdered	ʒij.
	Carbonate of soda,	
	Sulphate of iron,	
	Treacle, āā	ʒj.

Rub the myrrh with the carbonate of soda, then add the sulphate of iron and with treacle form them into a mass in a vessel previously warmed.

Dubl. Ph. 1826.

The same as the London, except that raw sugar is substituted for treacle.

Med. use. Tonic and emmenagogue. *Dose*, from 10 to 20 grains.

PILULÆ FERRI SULPHATIS. *Pills of sulphate of iron.*

Edin. Ph. 1841.

℞	Dried sulphate of iron	2 parts.
	Extract of taraxacum	5 ,,
	Conserve of red roses	2 ,,
	Liquorice-root powder	3 ,,

Beat them together into a proper mass, which is to be divided into five-grain pills.

Med. use. Tonic. *Dose*, one to two.

PILULÆ GALBANI COMPOSITÆ. *Compound Galbanum pills.*

Lond. Ph. 1836.

℞	Galbanum,	℥j.
	Myrrh,	
	Sagapenum, āā	℥iss.
	Assafœtida	℥ss.
	Syrup	q. s.

Beat them together until incorporated.

Dubl. Ph. 1826.

The same as the London, except that for syrup treacle is substituted.

Med. use. Antispasmodic and emmenagogue. *Dose,* grs. x. to grs. xx.

PILULÆ HYDRARGYRI. *Pills of mercury.*

Lond. Ph. 1836, and Dubl. Ph. 1826.

℞	Mercury	ʒij.
	Confection of red rose	ʒiij.
	Liquorice, powdered	ʒj.

Rub the mercury with the confection, until globules can no longer be seen; then the liquorice being added, beat the whole together, until incorporated.

Edin. Ph. 1841.

℞	Mercury	2 parts.
	Liquorice root, in powder	1 part.
	Conserve of red roses	3 parts.

Beat the mercury and conserve into a uniform mass till globules of mercury can no longer be detected, then add the liquorice-root, and beat the whole again into a proper mass, which is to be divided into five-grain pills.

Med. use. Alterative and purgative. As an alterative it is given in *doses* of from four to six grains; as a purgative, from 10 to 20 grs.

PILULÆ HYDRARGYRI CHLORIDI COMPOSITÆ. *Compound pills of chloride of mercury. Plummer's pills.*

Lond. Ph. 1836.

℞	Chloride of mercury,	
	Oxysulphuret of antimony, āā	ʒij.
	Guaiacum resin, powdered	℥ss.
	Treacle	ʒij.

Rub the chloride of mercury with the oxysulphuret of antimony, then with the guaiacum resin and treacle, until they become incorporated.

Ed. Ph. 1841. *Pilulæ calomelanos compositæ.*

℞	Calomel,	
	Golden sulphuret of antimony, āā	1 part.
	Guaiac, in fine powder,	
	Treacle, āā	2 parts.

Mix the solids in fine powder, then the treacle, and beat the whole into a proper pill-mass; to be divided into six-grain pills.

Dubl. Ph. 1826. *Pilulæ calomelanos compositæ.*

℞	Calomel,	
	Brown antimoniated sulphur, āā	ʒi.
	Guaiac resin, reduced to powder	ʒij.

Rub them together so that they may be thoroughly mixed, then add as much treacle as may be sufficient to form them into a mass of the proper consistence.

Med. use. Diaphoretic and alterative in syphilitic affections of the skin. *Dose,* from 5 grs. to 10 grs.

PILULÆ HYDRARGYRI IODIDI. *Pills of iodide of mercury.*

Lond. Ph. 1836.

℞	Iodide of mercury	ʒj.
	Confection of dog-rose	ʒiij.
	Ginger, powdered	ʒj.

Beat them together until incorporated.

Med. use. These pills have been given in scrofulous affections, in the *dose* of from gr. j to grs. iij.

PILULÆ IPECACUANHÆ COMPOSITÆ. *Compound pills of ipecacuanha.*

Lond. Ph. 1836.

℞	Compound powder of ipecacuanha	ʒiij.
	Squill, fresh dried,	
	Ammoniacum, āā	ʒj.
	Mixture of acacia	q. s.

Beat them together until incorporated.

Med. use. Diaphoretic and expectorant. *Dose,* grs. v. thrice a day.

PILULÆ IPECACUANHÆ ET OPII. *Pills of ipecacuanha and opium.*

Edin. Ph. 1841.

℞	Powder of ipecacuan and opium	3 parts.
	Conserve of red roses	1 part.

Beat them into a proper mass, which is to be divided into four-grain pills.

Med. use. Diaphoretic. *Dose,* from 10 to 15 grs.

PILULÆ PECTORALES. *Cough Pills.*

Dr. Latham.

℞	Compound powder of ipecacuanha	ʒj.
	Fresh squill,	
	Ammoniacum, gum resin, āā	℈j.
	Calomel	grs. iv.

Mix and form into 20 pills. One three times a day.

PILULÆ PLUMBI OPIATÆ. *Opiated lead pills.*

Edin. Ph. 1841.

℞	Acetate of lead	6 parts.
	Opium	1 part.
	Conserve of red roses	about 1 part.

Beat them into a proper mass, which is to be divided into four-grain pills. This pill may be made also with twice the quantity of opium.

Med. use. Sedative. Eight grains of this mass contain one grain of opium and six of acetate of lead.

PILULÆ QUINÆ SULPHATIS. *Pills of sulphate of quinine.*

U. S. Ph. 1840.

℞	Sulphate of quinine	℥j.
	Gum arabic, in powder	ʒij.
	Syrup	q. s.

Mix together the sulphate of quinine and the gum; then beat them with the syrup so as to form a mass, to be divided into 480 pills.

PILULÆ RHEI. *Rhubarb pills.*

Edin. Ph. 1841.

℞	Rhubarb, in fine powder	9 parts.
	Acetate of potash	1 part.
	Conserve of red roses	5 parts.

Beat them into a proper mass, and divide it into five-grain pills.

Med. use. Aperient and useful in dyspepsia. *Dose*, one or two pills, or even more.

PILULÆ RHEI COMPOSITÆ. *Compound rhubarb pills.*

Lond. Ph. 1836.

℞ Rhubarb, powdered	℥j.
Aloes, powdered	ʒvj.
Myrrh, powdered	℥ss.
Soap	ʒj.
Oil of caraway	fʒss.
Syrup	q. s.

Mix the powders together, then beat the whole together until incorporated.

Edin. Ph. 1841.

℞ Rhubarb, in powder	12 parts.
Aloes, in fine powder	9 parts.
Myrrh,	
Castile soap, āā	6 parts.
Oil of peppermint	1 part.
Conserve of red roses	5 parts.

Mix them, and beat them into a proper mass, and divide it into five-grain pills. This pill may be also made without oil of peppermint, when so preferred.

Med. use. A gentle aperient in the *dose* of from ten to twenty grains.

PILULÆ RHEI ET FERRI. *Pills of rhubarb and iron.*

Edin. Ph. 1841.

℞ Dried sulphate of iron	4 parts.
Extract of rhubarb	10 parts.
Conserve of red roses	5 parts.

Beat them into a proper pill-mass, and divide it into five.grain pills.

PILULÆ SAGAPENI COMPOSITÆ. *Compound pills of sagapenum.*

Lond. Ph. 1836.

℞ Sagapenum	℥j.
Aloes	ʒss.
Syrup of ginger	q. s.

Beat them together until incorporated.

Med. use. Antibilious and laxative. *Dose*, grs. v. to grs. x.

PILULÆ SAPONIS COMPOSITÆ. *Compound pills of soap.*

Lond. Ph. 1836, and Dubl. Ph. 1826.

℞ Hard opium, powdered	℥ss.
Soap	℥ij.

Beat them together until incorporated.

Med. use. Narcotic: five grains contain one grain of opium

PILULÆ STYRACIS COMPOSITÆ. *Compound pills of storax.*

Lond. Ph. 1836.

℞ Storax, strained	ʒiij.
Hard opium, powdered,	
Saffron, āā	ʒj.

Beat them together till incorporated.

Pilulæ styracis. *Pills of storax.*

Lond. Ph. 1841.

℞ Opium,	
Saffron, āā	1 part.
Extract of storax	2 parts.

Beat them into a uniform mass, which is to be divided into four-grain pills.

Dubl. Ph. 1836.

℞ Storax resin	ʒiij.
Turkey opium,	
Saffron, āā	ʒj.

Beat them together till they are well mixed.

Med. use. Sedative. *Dose,* from grs. iv. or grs. v. to gr. viij.

Pilulæ scillæ compositæ. *Compound pills of squills.*

Lond. Ph. 1836.

℞ Squill, fresh-dried and powdered	ʒi.
Ginger, powdered,	
Ammoniacum, powdered, āā	ʒij.
Soap	ʒiij.
Syrup	q. s.

Mix the powders together; then beat them with the soap, and add the syrup, so as to obtain a proper consistence.

Dubl. Ph. 1826.

℞ Powder of squill, recently dried	ʒj.
Powder of ginger,	
Hard soap, āā	ʒiij.
Gum ammoniac	ʒij.

Mix the powder, then add the soap and the ammoniac, and with treacle make a mass of a proper consistence.

Med. use. Expectorant. Diuretic. *Dose,* grs. v. to grs. xx.

Pilulæ scillæ. *Pills of squills.*

Edin. Ph. 1841.

℞ Squill, in fine powder	5 parts.
Ammoniac,	
Ginger, in fine powder,	
Spanish soap, āā	4 „
Conserve of red roses	2 „

Mix the powders, add the other articles, beat them into a uniform mass, and divide it into five-grain pills.

Med. use. The same as of the compound squill pill.

Piperine.

A crystallizable body obtained from black or long pepper, by treating them with alcohol. It is a feeble base, but does form some salts.

It has been used on the continent as a remedy in intermittents.

Platinum. *Symb.* Pl. *Equiv.* 98.

A very dense, white metal, malleable and ductile. It cannot be fused by the heat of a furnace, and is not acted on by any acid but aqua regia. It is oxidized and corroded, however, when heated with caustic alkalies, and readily forms alloys with other metals, which indicates the precautions to be adopted in the use of platinum crucibles. Platinum is always found in the metallic state, but alloyed with other metals.

PLATINI BICHLORIDUM. *Bichloride of platinum.*

This is best formed by dissolving spongy platinum in aqua regia, and gently evaporating the solution to dryness. It is soluble in water, and in spirit.

Dose. From gr. ss. to gr. ij.

PLATINI ET SODII CHLORIDUM. *Chloride of platinum and sodium. Platino-chloride of sodium.*

℞	Bichloride of platinum	17 parts.
	Chloride of sodium	6 ,,

Dissolve the two salts in water, mix the solutions, and evaporate that crystals may form.

Dose. From gr. ss. to gr. ij.

PLUMBUM. *Lead. Symb.* Pb. *Equiv.* 104.

A soft, bluish-grey metal. Sp. gr. 11·38. Melts at 612° Fah. It is principally obtained from the native sulphuret, or Galena.

PLUMBI ACETAS. *Acetate of lead.*

Lond. Ph. 1836.

℞	Oxide of lead, rubbed to powder	lbiv. & ℥ij.
	Acetic acid,	
	Distilled water, āā	Oiv.

Mix the acid with the water, and add the oxide of lead to them, and a gentle heat being applied dissolve it; then strain. Lastly, evaporate the liquor that crystals may be formed.

Note.—Dissolved by distilled water. By carbonate of soda a white precipitate is thrown down from the solution, and by iodide of potassium a yellow one; by hydrosulphuric acid it is blackened. Sulphuric acid evolves acetic vapours. By heat it first fuses, and is afterwards reduced to metallic lead.

Edin. Ph. 1841.

℞	Pyroligneous acid (D. 1034)	Oij.
	Distilled water	Oj.
	Litharge	℥xiv.

Mix the acid and water, add the litharge, dissolve it with the aid of a gentle heat, filter, concentrate the solution sufficiently for crystallization on cooling.

Note.—Entirely soluble in distilled water acidulated with acetic acid: forty-eight grains thus dissolved are not entirely precipitated by a solution of 30 grains of phosphate of soda.

Dubl. Ph. 1826.

℞ Carbonate of lead named *Ceruse*, any required quantity.
Distilled vinegar, ten times the weight of the carbonate of lead.

Digest in a glass vessel, until the vinegar becomes sweet; having poured this off, add more vinegar until it ceases to acquire a sweet taste. Filter the liquor, and by slow alternate evaporation and refrigeration let crystals be formed, which are to be dried in the shade.

Use. As an astringent both externally and internally in solution in water, as a collyrium in ophthalmia, an astringent in gonorrhœa. Internally, combined with opium, in pulmonary and intestinal hæmorrhage, in the dose of from gr. ss. to gr. j.

LIQUOR PLUMBI DIACETATIS. *Solution of diacetate of lead.*

Lond. Ph. 1836.

℞ Acetate of lead . lbij. & ℥iij.
Oxide of lead, rubbed to powder . . lbj. & ℥iv.
Water . . Ovj.

Boil them for half an hour, frequently stirring, and when the liquor is cold, add of distilled water as much as may be sufficient to measure with it six pints; lastly, strain.

Note—Specific gravity is 1·260, its other properties similar to those of the plumbi acetas.

Edin. Ph. 1841. *Plumbi diacetatis solutio.*

℞ Acetate of lead . ℥vj. & ʒvj.
Litharge, in fine powder ℥iv.
Water . . Oiss.

Boil the salt and litharge with the water for half an hour, stirring occasionally. When the solution is cold, add water, if necessary, to make a pint and half; and then filter. Preserve the solution in well-closed bottles.

Note.—This is *Goulard's extract.* A copious precipitate is gradually formed when the breath is propelled through it by means of a tube.

Dubl. Ph. 1826. *Plumbi subacetatis liquor.*

℞ Semivitreous oxide of lead . : 1 part.
Distilled vinegar . . . 12 parts.

Let the mixture be boiled down in a glass vessel, until eleven parts of the fluid remain, then let the liquor rest, and when the impurities have subsided let it be filtered.

Use. Externally used in superficial inflammation of the skin. It also enters into several of the preparations of the Pharmacopœia.

LIQUOR PLUMBI DIACETATIS DILUTUS. *Diluted solution of diacetate of lead.*

Lond. Ph. 1836.

℞ Solution of diacetate of lead fʒiss.
Distilled water . . Oj.
Proof spirit . . fʒij.
Mix.

Dubl. Ph. 1826. *Liquor plumbi subacetatis compositus.*

℞ Solution of subacetate of lead ʒj.
Distilled water . . Oj.
Proof spirit . . . ʒj.
Mix.

Used in superficial inflammation.

PLUMBI CARBONAS. *Cerussa. Ceruss. Carbonate of lead.* This may be made by precipitation, or by direct combination of carbonic acid and oxygen with metallic lead. The precipitated carbonate is formed by adding an alkaline carbonate to solution of acetate or nitrate of lead, or by passing carbonic acid gas through solution of subacetate or subnitrate of lead. The compounds obtained by these processes, however, are considered inferior, for the purpose of painting, to that formed by exposing sheets of metallic lead in the vapours of acetic acid. This is the old, and, for practical purposes, still the best process.

PLUMBI CHLORIDUM, *Chloride of lead.*

Lond. Ph. 1836.

℞	Acetate of lead	℥xix.
	Distilled water, boiling	Oiij.
	Chloride of sodium	℥vj.

Dissolve the acetate of lead and chloride of sodium separately, the former in three pints of distilled water, and the latter in one pint of distilled water. Then the liquors being mixed together, wash what is precipitated with distilled water, when it is cold, and dry it.

Note.—Totally dissolved by boiling water, the chloride concreting almost entirely into crystals as it cools. On the addition of hydrosulphuric acid it becomes black, and by heat yellow.

Used for preparing the hydrochlorate of morphia.

PLUMBI CHROMAS. *Chromate of lead. Chrome yellow.* This compound, which is extensively used as a pigment, is made of several different shades of colour, varying from canary yellow to deep orange. The lightest coloured is made by adding solution of chromate of potash, with which a little alum or sulphuric acid has previously been mixed, to solution of acetate or of nitrate of lead. The deepest coloured is obtained from chromate of potash and diacetate of lead; and the intermediate colours by adding the neutral chromate of potash to acetate of lead, or to a mixture of acetate and diacetate. It has also been observed that the precipitates formed from the same solutions, when mixed at different temperatures, differ in colour.

PLUMBI DICHROMAS. *Dichromate of lead. Chrome red.* This very beautiful pigment, which, when well made, nearly equals vermilion in colour, is prepared in the following manner:—

Put saltpetre into a hessian crucible, and fuse it, in a clear fire, at a bright red heat; then, throw chromate of lead into the fused salt in small quantities at a time, stirring the mixture with a glass rod, as long as a violent action continues to take place on each addition. At the end of the process the dichromate will occupy the bottom of the crucible in the form of a black-looking deposit. The chromate of potash, which will form a stratum over the surface of the dichromate, must be immediately poured off; the crucible allowed to cool, and then the dichromate washed with water, and dried.

Much nicety is required in properly regulating the temperature, upon which the result much depends, and this can only be acquired from practice.

PLUMBI IODIDUM. *Iodide of lead.*

Lond. Ph. 1836.

℞	Acetate of lead	℥ix.
	Iodide of potassium	℥vij.
	Distilled water	cong. j.

Dissolve the acetate of lead in six pints of the water, and strain; and to these add the iodide of potassium first dissolved in two pints of the water. Wash what is precipitated, and dry it.

Note. Totally dissolved by boiling water, and as it cools separates in shining yellow scales. It melts by heat, and the greater part is dissipated first in yellow, and afterwards in violet vapours.

Edin. Ph. 1841.

℞	Iodide of potassium,	
	Nitrate of lead, āā	℥j.
	Water	Oiss.

Dissolve the salts separately, each in one-half of the water; add the solutions; collect the precipitate on a filter of linen or calico, and wash it with water. Boil the powder in three gallons of water acidulated with three fluidounces of pyroligneous acid. Let any undissolved matter subside, maintaining the temperature near the boiling point; and pour off the clear liquor, from which the iodide of lead will crystallize on cooling.

Note. Bright yellow; five grains are entirely soluble, with the aid of ebullition, in one fluidrachm of pyroligneous acid diluted with a fluidounce and a half of distilled water; and golden crystals are abundantly deposited on cooling.

Use. For the discussion of glandular obstructions. *Dose.* For internal use, gr. ss. to gr. iv.

PLUMBI NITRAS. *Nitrate of lead.*

Edin. Ph. 1841.

℞	Litharge	℥ivss.
	Diluted nitric acid	Oj.

Dissolve the litharge to saturation with the aid of a gentle heat. Filter, and set the liquid aside to crystallize. Concentrate the residual liquid to obtain more crystals.

Not subject to adulteration.

Used to form the iodide of lead.

PLUMBI NITRO-SACCHARAS. *Nitro-saccharate of lead.*

Dr. S. E. Hoskins.

℞	Sugar	1 part.
	Nitric acid	2 parts.
	Water	10 ,,

Heat them together in a porcelain dish as long as chemical action continues; then dilute the liquor with water, neutralize it with chalk, and to the filtered solution add acetate of lead as long as a precipitate is formed. Collect, wash, and dry this precipitate, which is saccharate of lead. Dissolve the saccharate of lead in dilute nitric acid, (1 part acid to 19 water,) filter the solution, and evaporate it until crystals are formed. They are described as being transparent, of an amber colour, and in the form of regular hexagonal plates or prisms.

Med. use. As a chemical solvent of phosphatic calculi.

PLUMBI OXYDUM HYDRATUM. *Hydrated oxide of lead.*

Lond. Ph. 1836.

℞	Solution of diacetate of lead	Ovj.
	Distilled water	cong. iij.
	Solution of potash	Ovj., or as much as may suffice to precipitate the oxide.

Mix. Wash with water what is precipitated until nothing alkaline remains.

What is used in preparing disulphate of quina should be totally dissolved by dilute nitric acid. Its remaining properties resemble those of the semi-vitreous oxide of lead.

It is employed in preparing the disulphate of quina.

PLUMBI OXYDUM SEMIVITREUM. *Semivitrefied oxide of lead. Litharge.*

Made by exposing melted lead in a reverberating furnace to a current of air until fully oxidized.

PLUMBI OXYDUM RUBRUM. *Red lead.*

Made by exposing litharge, heated to between 600° and 700°, to the further oxidizing agency of the air.

PLUMBI TANNAS. *Tannate of lead.*

Impure tannate of lead has been recommended by Dr. Tott as an application to sloughing sores produced by lying in bed. The following is his formula:—

℞	Oak bark, in coarse powder	℥j.
	Water	℥viij.

Boil till reduced to ℥iv, then strain, and add solution of acetate of lead as long as any precipitate is formed; collect the precipitate on a filter, wash it, and dry it to the consistence of an ointment.

POMATUM. (From *pomum*, an apple.)

A fragrant ointment, originally made with apples.

Pomatum pour rafraicher le teint, et ôter les rougeurs du visage.

℞	Suet,	
	Lard, āā	℥iv.
	Wax	℥j.
	Rennet apples, cut in pieces	No. 2.
	Oil of almonds	℥j.
	Essence of lemons	ʒij.
	Otto of roses	ʒss.

Keep melted by the heat of boiling water for two hours, then strain, and pour it into cold water.

Common pomatum.

℞	Lard	lbxij.
	Suet	lbiv.
	Essence of lemon	℥viij.

Melt and mix.

Hard pomatum.

℞	Lard,	
	Suet, āā	lbj.
	Wax	℥iv.
	Essence of lemon	℥j.

Melt and mix.

Roll pomatum.

℞	Suet	lbv.
	Wax	℥viij.
	Spermaceti	℥ij.
	Oil of lavender	ʒij.
	Oil of bergamot	ʒj.

Melt and mix.

East Indian pomatum.

℞	Suet	lbix.
	Lard	lbviij.
	Wax	lbj.
	Benzoin	℥x.
	Essence of lemon	℥vj.
	Musk	℈j.

Put the ingredients into a jar, and keep it immersed in boiling water for two hours, frequently stirring it; then strain through flannel.

POMMADE DIVINE.

1.

℞	Washed and purified beef marrow	lbij.
	Storax,	
	Cypress wood,	
	Orris root, in powder, āā	℥ij.
	Cinnamon, in powder	℥j.
	Cloves,	
	Nutmegs, in powder, āā	ʒss.

Keep them melted by the heat of boiling water, for six hours, then strain through flannel.

2.

℞	Washed and purified beef marrow	lbij.
	Cinnamon,	
	Storax,	
	Benzoin,	
	Orris root,	
	Cypress wood, āā	℥iss.
	Cloves,	
	Nutmegs, āā	ʒss.

Keep them melted by the heat of boiling water for six hours, then strain through flannel.

POTASSA. *Potash. Hydrate of potash.*

Edin. Ph. 1841.

Take any convenient quantity of aqua potassæ, evaporate it in a clean and covered iron vessel, increasing gradually the heat, till an oily-looking fluid remains, a drop of which, when removed on a rod, becomes hard on cooling, Then pour out the liquid upon a bright iron plate, and as soon as it solidifies break it quickly, and put it into glass bottles secured with glass stoppers.

POTASSÆ HYDRAS. *Hydrate of potash.*

Lond. Ph. 1836.

R	Solution of potash	cong. j.

Evaporate the water in a clean iron vessel over the fire until the ebullition having ceased, the hydrate of potassa melts: pour this into proper moulds.

Note.—In an open vessel it speedily liquefies. It is totally soluble in alcohol. For its other properties see Potassæ liquor.

POTASSA CAUSTICA. *Caustic potash. Hydrate of potash. Potassæ hydras.*

Dubl. Ph. 1826.

Take of the water of caustic potash any required quantity. In a perfectly clean vessel of silver or iron let the water evaporate by heat until the ebullition has ceased, and the saline matter, on increase of the heat, shall remain perfectly at rest in the vessel. Let the liquefied potash be poured out on a plate of silver or iron, and whilst concreting let it be cut into portions of a proper size; these should be immediately passed into a well-stopped bottle.

The operator should carefully avoid the drops which are ejected from the vessel during the evaporation.

Med. use. Merely as a caustic.

POTASSÆ ACETAS. *Acetate of potash.*

Lond. Ph. 1836.

℞	Carbonate of potash . . .	lbj.
	Acetic acid	f℥xxvj.
	Distilled water . . .	f℥xij.

Add the carbonate of potash to the acid, first mixed with the water, to saturation, then strain. Evaporate the liquor in a sand-bath, the heat being cautiously applied, until the salt is dried.

Note.—Totally dissolved, both by water and by alcohol; the solution does not affect either litmus or turmeric. Nothing is precipitated from the aqueous solution either by chloride of barium or nitrate of silver; if the solution be strong, then any precipitate which the latter may occasion is re-dissolved on the addition of dilute nitric acid or water. By a red heat it is totally converted into carbonate of potash. Sulphuric acid added to it emits acetic vapours.

Edin. Ph. 1841.

℞	Pyroligneous acid . . .	Oiss.
	Carbonate of potash (dry) . .	℥vij. or q. s.

Add the carbonate gradually to the acid till complete neutralization is accomplished. Evaporate the solution over the vapour-bath till it is so concentrated as to form a concrete mass when cold. Allow it to cool and crystallize in a solid cake, which must be broken up and immediately put into well-closed bottles.

Note.—Not subject to adulteration.

Dubl. Ph. 1826.

Take of carbonate of potash, from crystals of tartar any required quantity. Pour on it by repeated additions distilled vinegar of a *medium* heat, and in quantity about five times the weight of the salt. When the effervescence shall have ceased, and the liquor have given off vapours during some time, let the addition of the distilled vinegar be repeated at intervals, until effervescence shall have completely ceased. By continued evaporation the salt will become dry, and by a moderate increase of the heat it is to be cautiously liquefied. When the salt has cooled let it be dissolved in water; filter the liquor, and boil it down until, when removed from the fire, on cooling, it forms a mass of crystals, which should be perfectly white. Let it be immediately passed into bottles, which should be carefully stopped.

Med. use. In small doses diuretic, and in larger cathartic. As a diuretic, from ℈j to ʒj; as a cathartic, from ʒij to ʒiij.

Potassæ arsenias. *Arseniate of potash. Binarseniate of potash.*

℞	Arsenious acid,	
	Nitrate of potash, āā . . .	p. æ.

Mix them together, and put them into a clean Florence flask; heat the flask over a clear fire until the mixture fuses, and continue the heat as long as red vapours are disengaged. When the flask has cooled, break it, dissolve the salt in boiling distilled water and put it to crystallize.

Potassæ bicarbonas. *Bicarbonate of potash.*

Lond. Ph. 1836.

℞	Carbonate of potash .	lbvj.
	Distilled water . .	cong. j.

Dissolve the carbonate of potash in the water. Afterwards pass carbonic acid through the solution to saturation. Apply a gentle heat, so that whatever crystals have been formed may be dissolved. Then set aside [the solution] that crystals may be again produced; the liquor being poured off, dry them.

Carbonic acid is very easily obtained from chalk rubbed to powder and mixed with water to the consistence of a syrup, upon which sulphuric acid is then poured diluted with an equal weight of water.

Note.—Totally dissolved by water, and the solution slightly changes the colour of turmeric. Sulphate of magnesia throws down nothing from this solution unless it be heated. From 100 parts 30·7 are expelled by a red heat. After the addition of excess of nitric acid chloride of barium throws down nothing, and nitrate of silver very little, if any thing.

Edin. Ph. 1841.

℞	Carbonate of potash .	℥vj.
	Carbonate of ammonia .	℥iijss.

Triturate the carbonate of ammonia to a very fine powder; mix with it the carbonate of potash; triturate them thoroughly together, adding by degrees a very little water, till a smooth and uniform pulp be formed. Dry this at a temperature not exceeding 140°, triturating occasionally towards the close; and continue the desiccation till a fine powder be obtained, entirely free of ammoniacal odour.

Note.—A solution in 40 parts of water does not give a brick-red precipitate with solution of corrosive sublimate; and when supersaturated with nitric acid, is not affected by solution of nitrate of baryta or nitrate of silver.

Dubl. Ph. 1826.

℞	Carbonate of potash from potashes .	1 part.
	Distilled water . . .	2 parts.

Dissolve.

Expose the solution, in a suitable apparatus, to the current of carbonic acid gas, which escapes when white marble is dissolved in diluted muriatic acid, until the liquor becomes turbid, then filter it, and again expose it to the stream of carbonic acid gas, until the alkali is saturated. Finally, let it rest in a cool place to form crystals, which are to be dried without heat, and preserved in well-closed vessels.

Use. When alkali is indicated, this will be found an agreeable and efficient remedy. *Dose*, gr. x. to gr. xxx.

POTASSÆ BISULPHAS. *Bisulphate of potash.*

Lond. Ph. 1836.

℞ Of the salt which remains after the distillation of nitric acid	lbij.
Sulphuric acid . .	lbj.
Water boiling . .	Ovj.

Dissolve the salt in the water, and add the acid to it and mix. Lastly, boil down, and set aside the solution, that crystals may be formed.

Edin. Ph. 1841.

℞ Of the residuum in the preparation of pure nitric acid .	lbij.
Sulphuric acid (commercial)	f℥vij and f℥j.
Boiling water . .	Ovj.

Dissolve the salt in the water, add the acid, concentrate the solution, and set it aside to cool and form crystals.

Note.—A solution in eight waters effervesces briskly with alkaline carbonates.

Dub. Ph. 1826.

℞ Sulphuric acid of commerce . .	2 parts,
Carbonate of potash from potashes .	q. s.
Water	6 parts.

Let one portion of the sulphuric acid mixed with the water be saturated by the carbonate of potash, then let the other portion of the acid be added to the mixture. Let the liquor evaporate until, on cooling, crystals are formed.

Med. use. Purgative, when combined with other purgatives. *Dose*, from gr. x. to ʒj.

POTASSÆ BORO-TARTRAS. *Boro-tartrate of potash. Soluble cream of tartar.*

Codex.

℞ Bitartrate of potash . . .	40
Boracic acid, crystallized . .	10
Water	240

Dissolve the salt and acid in the water with heat, evaporate the solution either to dryness, or to a syrupy consistence, and spread it on plates to dry in scales.

POTASSII BROMIDUM. *Bromide of potassium.*

Lond. Ph. 1836.

℞ Bromine	℥ij.
Carbonate of potash . .	℥ij and ʒj.
Iron filings . . .	℥j.
Distilled water . . .	Oiij.

First add the iron, and afterwards the bromine, to a pint and half of the distilled water. Set them by for half an hour, frequently stirring them with a spatula. Apply a gentle heat, and when a greenish colour occurs, pour in the carbonate of potash, dissolved in the remainder of the water. Strain and wash what remains in two pints of boiling distilled water, and again strain. Let the mixed liquors be evaporated, so that crystals may be formed.

Note.—Totally dissolved by water. It does not alter the colour of litmus or turmeric. Chloride of barium throws down nothing from the solution. Sulphuric acid and starch added together render it yellow. Subjected to heat it loses no weight. Ten grains of this salt are capable of acting upon 14·28 grains of nitrate of silver and precipitating a yellowish bromide of silver, which is dissolved by ammonia, and but very little by nitric acid.

Med. use. In cases of enlarged spleen. *Dose,* gr. iij to gr. x, two or three times a day.

POTASSA CUM CALCE. *Potash with lime.*

Lond. Ph. 1836.

℞ Hydrate of potash,
Lime, āā . . . ℥j.

Rub them together, and keep them in a well-stopped vessel.

Note.—Mixes with water. On the addition of an acid it yields no carbonic acid. It is not entirely dissolved in alcohol.

Edin. Ph. 1841.

Take any convenient quantity of aqua potassæ; evaporate it in a clean covered iron vessel to one-third of its volume; add slaked lime till the fluid has the consisttence of firm pulp: preserve the product in carefully covered vessels.

Dubl. Ph. 1826.

Let the water of caustic potash evaporate to the fourth part, then add of recently burned lime, reduced to powder, as much as may be sufficient to form a mass of a proper degree of consistency; to be preserved in a well-stopped vessel.

Med. use. Merely as a caustic.

POTASSÆ CARBONAS. *Carbonate of potash. Salt of tartar.*

Lond. Ph. 1836.

℞ Impure carbonate of potash . . ℔ij.
Distilled water . . . . Oiss.

Dissolve the impure carbonate of potash in the water and strain; then pour it into a proper vessel, and evaporate the water, that the liquor may thicken; afterwards stir it constantly with a spatula, until the salt thickens.

Carbonate of potash may be prepared more pure from the crystals of bicarbonate of potash heated to redness.

Note.—Almost entirely dissolved by water; in an open vessel, it spontaneously liquefies. It changes the colour of turmeric brown. When supersaturated with nitric acid, neither carbonate of soda nor chloride of barium throws down any thing, and nitrate of silver but little. 100 parts lose 16 of water by a strong heat, and the same quantity loses 26·3 parts of carbonic acid on the addition of dilute sulphuric acid.

POTASSÆ CARBONAS PURUM. *Pure carbonate of potash.*

Edin. Ph. 1841.

Pure carbonate of potash may be most readily obtained by heating crystallized bicarbonate of potash to redness in a crucible, but more cheaply by dissolving bitartrate of potash in 30 parts of boiling water, separating and washing the crystals which form on cooling, heating these in a loosely-covered crucible to redness, so long as fumes are discharged, breaking down the mass, and roasting it in an open crucible for two hours, with occasional stirring, lixiviating the product with distilled water, filtering the solution thus obtained, evaporating the solution to dryness, granulating the salt towards the close by brisk agitation, and heating the granular salt to redness. The product of either process must be kept in well-closed vessels.

Note.—It does not lose weight at a low red heat; and a solution supersaturated with pure nitric acid is precipitated either faintly, or not at all, by solution of nitrate of baryta or nitrate of silver.

POTASSÆ CARBONAS E LIXIVO CINERE. *Carbonate of potash from pearl-ashes.*

Dubl. Ph. 1826.

℞ Potash, reduced to a coarse powder,	
Cold water, āā . . .	1 part.

Mix by rubbing them together, and macerate during a week, in any open vessel, occasionally shaking the mixture. Then filter the lixivium, and let it evaporate to dryness in a perfectly clean silver or iron vessel. Toward the end of the evaporation, let the saline mass be continually stirred with an iron rod. Thus reduced to a coarse powder, let it be laid by in close vessels. If the potashes be not sufficiently pure, before they are dissolved, let them be roasted in a crucible until they become white.

Use. It enters into several of the preparations of the Pharmacopœia. Antacid and diuretic. *Dose*, gr. x. to gr. xxx.

POTASSÆ CARBONAS E TARTARI CRYSTALLIS. *Carbonate of potash from crystals of tartar.*

Dubl. Ph. 1826.

Take of crystals of tartar any required quantity; heat them to redness in a silver crucible lightly covered, until they cease to emit vapours. Let the residue be reduced to a coarse powder, and roasted in the same crucible without a cover, with frequent stirring during two hours; then boil it with twice its weight of water during a quarter of an hour, and after the requisite subsidence pour off the clear liquor. Let this be done three times. Filter the mixed washings, and let them evaporate in a silver vessel. Let the residual salt, whilst becoming dry, be reduced by frequent stirring to a granular form; then let it be heated to an obscure red. Before it has perfectly cooled take it from the vessel, and preserve it in well-stopped bottles.

POTASSÆ CHLORAS. *Chlorate of potash.*

Mix carbonate of potass with an equivalent quantity of dry hydrate of lime, and expose the mixture to chlorine gas. This mixture, though quite dry, absorbs the gas with great energy, the temperature rises much above 212°, and water is freely evolved. When saturated, it may be moderately heated, which destroys a mere trace of hypochlorite it contains. The whole lime is found to be in the state of carbonate, and the potash as chlorate and chloride of potassium. The solution of these two latter salts is neutral, and free from any bleeching property. The chlorate is then crystallized out in the usual way. (Graham.)

POTASSII CYANURETUM. *Potassii cyanidum. Cyanuret of potassium. Cyanide of potassium.*

U. S. Ph. 1840.

℞	Ferrocyanuret of potassium, in powder	℥viij.
	Distilled water	f℥vj.

Expose the ferrocyanuret to a moderate heat until it becomes nearly white, and is wholly deprived of its water of crystallization. Put the residue in an earthen retort with the beak loosely stopped, and expose it to a red heat for two hours, or till gas ceases to be disengaged. Withdraw the retort from the fire, close the orifice with lute, and then let the whole remain until quite cold. Break the retort, remove the black mass, reduce it to coarse powder, introduce it into a bottle of the capacity of ℥xii., and then add the distilled water. Agitate the mixture occasionally for half an hour, throw it on a filter, evaporate the filtered solution rapidly to dryness, and keep the dried mass in a closely-stopped bottle.

Liebig's process.

℞	Ferrocyanide of potassium	8 parts.
	Dried carbonate of potash	3 „

Dry the ferrocyanide by heating it on an iron plate; mix it with the carbonate of potash, fuse the mixture in an earthen crucible, stirring it occasionally until gas ceases to be evolved; let it stand for a few minutes that the fused salt may become clear, and then pour this on to a marble slab. When cold, put it into stoppered bottles.

The salt made by this process will contain a portion of cyanate of potash.

POTASSII IODIDUM. *Iodide of potassium.*

Lond. Ph. 1836.

℞	Iodine	℥vj.
	Carbonate of potash	℥iv.
	Iron filings	℥ij.
	Distilled water	Ovj.

Mix the iodine with four pints of the water, and add the iron, stirring them frequently with a spatula for half an hour. Apply a gentle heat, and when a greenish colour occurs, add the carbonate of potash, first dissolved in the two pints of water, and strain. Wash what remains with two pints of boiling distilled water, and again strain. Let the mixed liquor be evaporated, so that crystals may be formed.

Note.—Totally soluble in water and in alcohol. It alters the colour of turmeric either not at all or very slightly. It does not alter the colour of litmus. Subjected to heat it loses no weight. Sulphuric acid and starch being added together, it becomes blue. Ten grains of this salt are sufficient to decompose 10·24 grains of nitrate of silver; what is precipitated is partly dissolved by nitric acid and partly altered in appearance, which is not the case when ammonia is added.

Edin. Ph. 1841.

℞	Iodine (dry)	℥v.
	Fine iron wire	℥iij.
	Water	Oiv.
	Carbonate of potash (dry)	℥ij. and ʒvj.

With the water iodine and iron wire, prepare the solution of iodide of iron as directed (under the head of *Ferri iodidum*). Add immediately, while it is hot, the carbonate of potash previously dissolved in a few ounces of water, stir carefully, filter the product, and wash the powder on the filter with a little water. Concentrate the liquor at a temperature short of ebullition, till a dry salt be obtained, which is to be purified from a little red oxide of iron and other impurities, by dissolving it in less than its own weight of boiling water, or still better, by boiling it in twice its weight of rectified spirit, filtering the solution, and setting it aside to crystallize. More crystals will be obtained by concentrating and cooling the residual liquor.

Note.—Its solution is not affected, or is merely rendered hazy, by solution of nitrate of baryta; a solution of five grains in a fluidounce of distilled water, precipitated by an excess of solution of nitrate of silver, and then agitated in a bottle, with a little aqua ammoniæ, yields quickly by subsidence a clear supernatant liquid, which is not altered by an excess of nitric acid, or is rendered merely hazy.

Dubl. Ph. 1826. *Potassæ hydriodas.*

℞	Iodine	1 part.
	Sulphuret of iron, reduced to coarse powder	5 parts.
	Sulphuric acid	7 „
	Distilled water	48 „
	Water of carbonate of potash	q. s.
	Rectified spirit	6 parts.

Mix the iodine by trituration with sixteen parts of the water, and put the mixture into a glass vessel. Pour the acid previously diluted with thirty-two parts of water, upon the sulphuret in a mattrass, and from a tube adapted to the neck of the mattrass, and reaching to the bottom of the vessel containing the iodine and water, let the gas pass through the mixture, until the iodine disappears. Having filtered the liquor, evaporate it without delay by a superior heat, to one-eighth part, and then filter it again. Then add gradually as much water of carbonate of potash as will be sufficient to saturate the acid, which is known by the cessation of the effervescence. Then expose the mixture to heat until the residual salt is dry and of a white colour; on this pour the spirit, and dissolve it with heat. Lastly, evaporate to dryness the liquor poured off from the residual salt, and preserve the residuum in a well-stopped vessel.

Med. use. Antisyphilitic. *Dose,* from gr. v. to gr. x. or more two or three times a day in the secondary form of syphilis.

POTASSÆ NITRAS. *Nitrate of potash. Saltpetre. Nitre.* This salt is imported principally from the East Indies, where it forms a natural production. It is purified by crystallization.

POTASSÆ NITRAS FUSA. *Fused nitrate of potash. Sal prunella.*

Nitrate of potash fused and cast into moulds.

POTASSÆ QUADROXALAS. *Quadroxalate of potash. Salt of sorrel.*

Neutralize a given quantity of carbonate of potash with oxalic acid, observing the quantity of acid used, then add three times the quantity of acid more. Evaporate the solution so that crystals may be formed.

POTASSÆ SULPHAS. *Sulphate of potash.*

Lond. Ph. 1836.

℞ Of the salt which remains after the distillation of nitric acid . lbij.
Water, boiling . . cong. ij.

Ignite the salt in a crucible until the excess of sulphuric acid is entirely expelled, then boil it in the two gallons of water until a pellicle floats, and the liquor being strained, set it aside that crystals may be formed. The liquor being poured off, dry them.

Note.—Insoluble in alcohol, and slightly soluble in distilled water. What is thrown down from the solution by chloride of platina is yellowish, and by chloride of barium is white, and insoluble in nitric acid.

Edin. Ph. 1841.

℞ Of the residuum of the preparation of pure nitric acid . lbij.
Boiling water . . cong. ij.
White marble, in powder, q. s.

Dissolve the salt in the water; add the marble gradually till effervescence ceases, and the solution is completely neutralized; filter the liquid, and evaporate it till a pellicle forms on its surface; then set it aside to cool and form crystals.

Note.—Not subject to adulteration.

Dubl. Ph. 1826.

Let the salt which remains after the distillation of nitric acid be dissolved in a sufficient quantity of hot water. Add of carbonate of potash from potashes, as much as may be sufficient to saturate the superabundant acid. Let the filtered liquor evaporate, that crystals may form.

Use. Aperient and deobstruent. *Dose*, gr. x. to ʒss.

POTASSÆ SULPHAS CUM SULPHURE. *Sulphate of potash with sulphur.*

Edin. Ph. 1841.

℞ Nitrate of potash and Sulphur . equal parts.

Mix them thoroughly; throw the mixture in small successive portions into a red-hot crucible; and when the deflagration is over, and the salt has cooled, reduce it to powder, and preserve it in well-closed bottles.

Note.—The nature of this preparation is undetermined.

POTASSII SULPHURETUM. *Sulphuret of potassium.*

Lond. Ph. 1836.

℞ Sulphur . . . ℥j.
Carbonate of potash . . ℥iv.

Rub them together, and place them upon the fire in a covered crucible, until they have united.

Note.—Fresh broken it exhibits a brownish-yellow colour. Dissolved in water, or in almost any acid, it exhales a smell of hydrosulphuric acid. The aqueous solution is of a yellow colour. What is thrown down by acetate of lead is first red, and it afterwards blackens.

Edin. Ph. 1841.

℞ Sulphur . . . ℥j.
Carbonate of potash . . ℥iv.

Triturate them well together, and heat them in a covered crucible till they form a uniform fused mass; which, when cold, is to be broken into fragments, and kept in well-closed vessels.

Note.—A mixture of sulphate of potash with persulphuret of potassium.

Dubl. Ph. 1826. *Potassæ sulphuretum.*

℞ Carbonate of potash, . . 4 parts.
Sublimed sulphur . . . 1 part.

Let them, previously mixed, and passed into a crucible, with a cover fitted on, be exposed to a heat gradually increased until they completely unite. Let the sulphuret be preserved in a well-closed vessel.

Note.—It is chiefly used externally as a lotion, as in treating scabies in infants.

POTASSÆ TARTRAS. *Tartrate of potash. Soluble tartar.*

Lond. Ph. 1836.

℞ Bitartrate of potash, powdered . . lbiij.
Carbonate of potash . ℥xvj, or q s..
Water, boiling . Ovj.

Dissolve the carbonate of potash in the boiling water, then add the bitartrate of potash, and boil. Strain the liquor, and afterwards boil it down until a pellicle floats, and set it aside that crystals may be formed. The liquor being poured off, dry these, and again evaporate the liquor that crystals may be produced.

Note.—Readily dissolved by water. From the solution almost any acid throws down crystals of bitartrate of potash, most of which adhere to the vessel. Whatever is precipitated from the same solution by chloride of barium or acetate of lead is dissolved by dilute nitric acid.

Edin. Ph. 1841.

℞ Bitartrate of potash lbiij.
Carbonate of potash ℥xvj, or q. s.
Boiling water . Ovj.

Dissolve the carbonate in the water, add the bitartrate till the liquor is neutralized, boil, and filter. Concentrate the liquor till a pellicle form on its surface, and then set it aside to cool and crystallize. The residual liquor will yield more crystals by farther condensation and cooling.

Note.—Entirely and easily soluble in four parts of boiling water: solution neutral, and yielding a crystalline precipitate with muriatic acid; 44 grains are not entirely precipitated by 55 of nitrate of lead.

Dubl. Ph. 1826.

℞ Carbonate of potash from potashes . 5 parts.
Bitartrate of potash . . . 14 „
Hot water . . . . 45 „

To the carbonate of potash dissolved in the water add the bitartrate of potash most minutely pulverized; let the liquor, previously filtered through paper, evaporate; and set it aside, that by cooling crystals may be formed.

Med. uses. A mild purgative; it is chiefly used for correcting the griping properties of resinous purgatives. *Dose*, ʒj to ℥j.

POT-POURRI.

A mixture of odorous flowers, roots, gums, &c., either mixed together dry, or preserved with salt. The usual way of making it is to collect roses, lavender, and other sweet-scented flowers, as they blow; to put them into a large jar mixed with salt, until a sufficient quantity has been collected; then to add to these such other odorous substances as may be required to form an agreeable perfume. Among the substances thus added are, Acorus calamus root, Calamine storax, Benzoin, Yellow sandal-wood, Cinnamon, Cloves, Cassia buds, Orange flowers, Orris root, Musk, and if requisite, some essential oils.

Instead of the fresh flowers, dried roses are sometimes used, and with the addition of some essential oils, these answer quite as well.

POTUS IMPERIALIS. *Imperial drink.*

℞	Cream of tartar . . .	℥ss.
	A lemon cut in slices.	
	White sugar	lbss.
	Spring water	Oiij.

Mix together, and let them stand for half an hour.

POUNCE.

Powdered sandarach resin, which is used for putting over fresh writing to give it a glistening appearance.

PREPARED COCHINEAL.

℞	Cochineal,	
	Salt of tartar,	
	Cream of tartar,	
	Alum, āā	ʒj.
	Distilled water . . .	℥viij.

Boil the cochineal and salt of tartar in the water, then add the cream of tartar and alum, and strain.

PROTEINE.

Dissolve albumen (white of egg) in moderately strong solution of caustic alkali, filter the solution, and add acetic acid in slight excess. The flocculent precipitate, which will be formed, is to be collected on a filter, washed, and dried.

PULVIS AGARICUS. *Mushroom powder.*

The mushrooms are gradually dried until reduced to a fit state for powdering, and a little white pepper, cloves, and mace, are mixed with the powder.

PULVIS ALBUMINIS. *Poudre clarifiante. Powder for clarifying wines.*

Beat together the whites and yolks of eggs, dry them with a gentle heat, and then reduce the dry mass to powder.

This powder is said to be exported to the French Sugar Islands for clarifying the cane juice.

PULVIS ALUMINIS COMPOSITUS. *Compound powder of alum.*

Edin. Ph. 1841.

℞	Alum	℥iv.
	Kino	℥j.

Mix them, and reduce them to fine powder.

Med. use. Astringent. *Dose,* gr. x. to gr. xv.

PULVIS ALOES COMPOSITUS. *Compound powder of aloes.*

Lond. Ph. 1836, and Dubl. Ph. 1826.

℞	Hepatic aloes . . .	℥iss.
	Guaiacum gum-resin . . .	℥j.
	Compound powder of cinnamon .	℥ss.

Rub the aloes and the guaiacum resin separately to powder; then mix them with the compound powder of cinnamon.

Med. use. Cathartic and sudorific. *Dose,* from gr. x. to xx.

PULVIS ALUMINIS CUM CAPSICO. *Alum and capsicum powder.*

Dr. Turnbull.

℞	Alum	3 parts.
	Concentrated tincture of capsicums .	1 part.

Mix and dry the powder.

PULVIS PRO ARGENTO. *Plate powder.*

Prepared chalk, polisher's putty powder, or a mixture of these, forms the best plate powder. The compositions, frequently sold, which contain mercury, are very injurious to the plate.

Plate boiling powder.

℞	Cream of tartar,	
	Common salt,	
	Alum, āā . . .	p. æ.

A small quantity of this powder added to the water in which the plate is boiled, gives it a silvery whiteness.

Silvering powder.

℞	Silver, powdered . .	gr. xx.
	Alum . . .	gr. xxx.
	Cream of tartar,	
	Common salt, āā . .	ʒij.

Mix. This powder formed into a paste with water, and rubbed over the surface of clean copper, gives it a coating of silver.

PULVIS ASARABACCÆ COMPOSITUS. *Compound powder of asarabacca. Cephalic snuff.*

Dubl. Ph. 1826.

℞	Leaves of asarabacca, dried	℥j.
	Lavender flowers, dried	ʒj.

Reduce them together to powder.

Med. use. Errhine. 5 to 6 grains snuffed up the nostrils.

PULVIS BASILICUS. *Basilic powder.*

℞	Calomel.	
	Washed calx of antimony,	
	Cream of tartar, āā	p. æ. Mix.

PULVIS CINNAMOMI COMPOSITUS. *Compound powder of cinnamon.*

Lond. Ph. 1836.

℞	Cinnamon	℥ij.
	Cardamom	℥iss.
	Ginger	℥j.
	Long pepper	℥ss.

Rub them together, so that a very fine powder may be made.

Edin. Ph. 1841. (*Pulvis aromaticus.*

℞	Cinnamon,	
	Cardamom seeds,	
	Ginger, āā	equal parts.

Mix them, and reduce to a very fine powder, which is to be kept in well-closed glass vessels.

Dubl. Ph. 1826.

℞	Cinnamon bark	℥ij.
	Cardamom seeds, freed from their capsules	
	Ginger, āā	℥j.
	Long pepper	ʒj.

Rub them together into powder.

Med. use. Carminative; a useful adjunct to other preparations. *Dose*, gr. v. to gr. xx.

PULVIS CLUPEÆ. *Anchovy powder.*

The fish, previously separated from the bones, is pounded, rubbed through a sieve, mixed with flour, gradually dried in a stove, or before the fire, and then powdered.

PULVIS PRO CATAPLASMATE. *Powder for cataplasm.*

Dubl. Ph. 1826.

℞	Linseed which remains after the expression of the oil	1 part.
	Oatmeal	2 parts. Mix.

Med. use. For making poultice.

PULVIS CORNU CERVINI USTI. *Powder of burnt hartshorn.*

Dubl. Ph. 1826.

Let pieces of hartshorn be burnt, until they become white; then reduce them to a very fine powder.

Med. use. In rachitis. *Dose,* 10 grs. to 30 grs.

PULVIS CRETÆ COMPOSITUS. *Compound powder of chalk.*

Lond. Ph. 1836, and Dubl. Ph. 1826.

℞	Prepared chalk . .	lbss.
	Cinnamon . . .	℥iv.
	Tormentil, Acacia, āā . . .	℥iij.
	Long pepper . . .	℥ss.

Rub them separately to very fine powder; then mix them.

Edin. Ph. 1841.

℞	Prepared chalk . .	℥iv.
	Cinnamon, in fine powder .	ʒiss.
	Nutmeg, in fine powder .	ʒj.

Triturate them well together.

Med. use. Antacid and astringent. *Dose,* from 5 grs. to 30 grs.

PULVIS CRETÆ COMPOSITUS CUM OPIO. *Compound powder of chalk with opium.*

Lond. Ph. 1836, and Dubl. Ph. 1826.

℞	Compound powder of chalk	℥viss.
	Hard opium, powdered .	℈iv.

Mix them.

Edin. Ph. 1841. *Pulvis cretæ opiatus.*

℞	Compound chalk powder .	℥vj.
	Powder of opium . .	℈iv.

Triturate them together thoroughly.

Med. use. Antacid and sedative. *Dose,* from 20 grs. to 40 grs.

PULVIS PRO CRINE, *Hair powder.*

Plain hair powder, is merely starch, powdered and sifted through a fine sieve. *Violet hair powder,* generally contains a little orris powder, and it may also be scented with essence of violets. Essential oils, musk, &c., are occasionally added to vary the character of the powder according to fancy.

PULVERES EFFERVESCENTES. *Effervescing powders. Sodaic powders.*

Edin. Ph. 1841.

℞	Tartaric acid, . . .	ʒj.
	Bicarbonate of soda . .	ʒj. and 54 grains;
	Or	
	Bicarbonate of potash . .	ʒj. and 160 grains.

Reduce the acid and either bicarbonate separately to fine powder, and divide each into sixteen powders; preserve the acid and alcaline powders in separate papers of different colours.

PULVERES EFFERVESCENTES APERIENTES. *Seidlitz powders.*

Blue paper.

℞	Potassio-tartrate of soda .	ʒij.
	Bicarbonate of soda . .	℈ij.

Mix.

White paper.

℞	Tartaric acid .	ʒss.

PULVERES EFFERVESCENTES CUM ABIETE. *Spruce beer powders.*

Blue paper.

℞ White sugar . . ʒiij.
Bicarbonate of soda . grs. xxvj.
Essence of spruce . gtt. v.
Mix.

White paper.

℞ Tartaric acid . . ʒss.

PULVERES EFFERVESCENTES CUM ZINGIBERE. *Ginger beer powders.*

Blue paper.

℞ White sugar . . ʒij.
Bicarbonate of soda . grs. xxvj.
Powdered ginger. . grs. v.
Essence of lemon . gtt. j.
Mix.

White paper.

℞ Tartaric acid . . ʒss.

PULVIS FUMALIS. *Fumigating powder.*

Ph. Bat. 1805.

℞ Benzoin,
Amber,
Mastic,
Olibanum, āā . . ʒvj.
Cascarilla . . . ℥ss.
Reduce them separately to coarse powder, and mix them.

Russ. Ph.

℞ Mastic,
Olibanum,
Amber, āā . . 3 parts,
Storax . . . 2 parts,
Benzoin,
Labdanum, āā . . 1 part.
Mix in coarse powder.

PULVIS IPECACUANHÆ COMPOSITUS. *Compound powder of ipecacuanha.*

Lond. Ph. 1836.

℞ Ipecacuanha, powdered,
Hard opium, powdered, āā . ʒj.
Sulphate of potash, powdered . ℥j.
Mix them.

Edin. Ph. 1841.

℞ Ipecacuanha, in powder,
Powder of opium, āā . ℥j.
Sulphate of potass . . ℥viij.
Triturate them together thoroughly.

Dubl. Ph. 1826.

℞ Ipecacuanha root,
Turkey opium, of each reduced to powder ʒj.
Sulphate of potash . . . ℥j.
Rub the sulphate of potash with the opium into powder, then mix in the ipecacuanha.

Med. use. Sudorific. Ten grains contain one grain of opium. *Dose,* grs. v. to ℈j.

PULVIS JALAPÆ COMPOSITUS. *Compound powder of jalap.*

Lond. Ph. 1836.

℞ Jalap . . . ℥iij.
Bitartrate of potash . ℥vj.
Ginger . . . ʒij.
Rub them separately to powder; then mix them.

Edin. Ph. 1841.

℞ Jalap, in powder . . ℥j.
Bitartrate of potash . ℥ij.
Triturate them to a very fine powder.

Dubl. Ph. 1826.

℞	Powder of jalap root	lbss.
	Bitartrate of potash	lbj.

Rub them together to a very fine powder.

Med. use. A hydragogue purgative, useful in costiveness, worms, and in several forms of dropsy. *Dose*, grs. xv. to grs. xl.

PULVIS KINO COMPOSITUS. *Compound powder of kino.*

Lond. Ph. 1836, and Dubl. Ph. 1826.

℞	Kino	ʒxv.
	Cinnamon	℥ss.
	Hard opium	ʒj.

Rub them separately to very fine powder; then mix them.

Med. use. Astringent and anodyne. *Dose*, grs. v. to grs. xx.

PULVIS PRO LIMONADO. *Lemonade powder.*

℞	White sugar	lbiv.
	Tartaric acid	℥j.
	Cream of tartar	ʒiv.
	Essence of lemon	ʒij.

Mix and preserve the powder in bottles.

PULVIS QUERCUS MARINÆ. *Powder of the quercus marina.*

Dubl. Ph. 1807.

℞ Fucus vesiculosus, in flower, any quantity.

Dry and cleanse it; then expose it to heat in an iron vessel or a crucible, to which a perforated cover is adapted, till vapours cease to ascend and the fucus has become of an obscure red heat. Then reduce to powder the carbonaceous matter which remains.

PULVIS RHEI COMPOSITUS. *Compound powder of rhubarb.*

Edin. Ph. 1841.

℞	Magnesia	lbj.
	Ginger in fine powder	℥ij.
	Rhubarb, in fine powder	℥iv.

Mix them thoroughly, and preserve the powder in well-closed bottles.

Med. use. A mild aperient in gout, &c. *Dose*, ℈j. to ʒss. This has been called *Gregory's mixture*, or *Gregory's powder.*

PULVIS SALINUS COMPOSITUS. *Compound saline powder.*

Edin. Ph. 1841.

℞	Pure muriate of soda,	
	Sulphate of magnesia, āā	℥iv.
	Sulphate of potash	℥iij.

Dry the salts separately with a gentle heat; and pulverize each, then triturate them well together and preserve the mixture in well-closed vessels.

Dubl. Ph. 1826.

℞	Pure muriate of soda,	
	Sulphate of magnesia, āā	4 parts.
	Sulphate of potash	3 parts.

Having first dried the salts with a gentle heat, rub them to a fine powder, at first separately, and afterwards together, and keep them in a well-closed vessel.

Med. use. An excellent purgative. *Dose*, from two to six drachms in half a pint of water before breakfast.

PULVIS SCAMMONII COMPOSITUS. *Compound powder of scammony.*

Lond. Ph. 1836, and Dubl. Ph. 1826.

℞ Scammony,
Hard extract of jalap, āā . ℥ij.
Ginger . . . ℥ss.

Rub them separately to very fine powder; then mix them.

Edin. Ph. 1841.

℞ Scammony,
Bitartrate of potash, āā equal parts.

Triturate them together to a very fine powder.

Med. use. Cathartic. *Dose*, grs. v. to grs. xx.

PULVIS SCILLÆ. *Powder of squill.*

Dubl. Ph. 1826.

Remove the membranous integuments from the bulb of the squill, cut it into slices and dry with an inferior heat; then reduce it to powder, which ought to be kept in glass bottles with ground stoppers.

Med. use. Expectorant, emetic and diuretic. *Dose*, 1 grain to 4 grains.

PULVIS SPONGIÆ USTÆ. *Powder of burnt sponge.*

Dubl. Ph. 1826.

Having cut sponge into pieces, beat it to free it from little stones; burn it in a closed iron vessel until it becomes black and friable, and reduce it to powder.

Med. use. Deobstruent. *Dose*, ʒj. to ʒiij.

PULVIS STERNUTATORIUS. *Snuff. Cephalic snuff.*

Ph. Bat. 1805.

℞ Tobacco leaves,
Marjoram leaves,
Lavender leaves, āā p. æ.

Let them be well dried and reduced to powder.

Common snuff is powdered tobacco, sometimes mixed with other substances to increase its irritating effect on the membrane of the nose, and scented in different ways to suit the fancy of the consumer. See *Snuff*.

PULVIS TRAGACANTHÆ COMPOSITUS. *Compound powder of tragacanth.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Tragacanth, powdered,
Acacia, powdered,
Starch, āā . . . . . ℥iss.
Sugar . . . . . ℥viij.

Rub the starch and sugar together to powder; then the tragacanth and acacia being added, mix them all.

Med. use. Demulcent. *Dose*, grs. x. to ʒj.

PUNCH.

An agreeable, intoxicating, acid drink.

Cold punch.

℞ Arrack,	
Port wine,	
Water, āā	Oij.
White sugar	lbj.
Juice of 8 lemons.	

Mix.

Gin punch.

℞ Gin	℥xij.
Water	Oiss.
Sherry	℥ij.
Sugar	lbss.
Juice and outside peel of 1 lemon.	

Mix.

Iced punch.

℞ Champagne or Rhenish wine	Oij.
Arrack	Oj.
White sugar	lbj.
Juice and outside peel of 6 lemons.	

Mix, and put it into a freezing mixture.

Milk punch.

℞ Outside peel of 24 lemons, steeped for two days in Oiv of rum or brandy, then add

Spirit	Oij.
Hot water	Ovj.
Lemon juice	Oij.
Sugar	lbiv.
Boiling milk	Oiv.
2 nutmegs, grated.	

Mix.

Tea punch.

℞ Hot tea	Oij.
Arrack	Oj.
White sugar	℥iv.
Juice of 8 lemons.	
Outside peel of 4 lemons.	

Mix.

Wine punch.

℞ Arrack	Oij.
Port wine	Oij.
Hot tea	Ovj.
Sugar	lbj.
Juice of 12 lemons.	

Mix.

PURL.

A mixture of beer with spirit or bitters.

PUTTY, GLAZIER'S.

Whiting made into a paste with boiled linseed-oil.

PUTTY, POLISHER'S.

Peroxide of tin, obtained by exposing melted tin in a reverberatory furnace, and calcining the dross which is raked from the surface of the melted metal.

PYROPHORUS. (From πυρ, fire, and φερω, I bear.)

A substance which ignites spontaneously when exposed to the air.

1.

Homberg's.

℞ Alum,	
Brown sugar, āā	p. æ.

Mix and expose the powder over the fire until dry, then put it into a Florence flask or glass tube, and keep it at a red heat until it ceases to emit flame; carefully close the mouth of the flask, and let it cool.

2.

℞ Alum	3 parts,
Flour	1 part.

Proceed as with No. 1.

3.

℞ Lamp-black	3 parts,
Burnt alum	4 parts,
Carbonate of potash	8 parts.

Proceed as with No. 1.

4.

℞	Sulphate of potash	9 parts,
	Lamp-black	5 parts.

Proceed as with No. 1.

5.

Enclose tartrate of lead in a glass tube, and keep it at a red heat until flame or vapour is no longer emitted; then seal the open end of the tube at the blow-pipe flame.

PYROTECHNY. (From πυρ, fire, and τεχνη, art.) The art of making fire-works.

Coloured fires.

Blue fire.

℞	Nitre	5 parts,
	Sulphur	2 parts,
	Metallic antimony	1 part.

Mix.

Crimson fire.

℞	Chlorate of potash	4¼ parts,
	Nitrate of strontia	67½ parts,
	Charcoal	5¾ parts,
	Sulphur	22½ parts.

Mix.

Green fire.

℞	Nitrate of baryta	62½ parts,
	Sulphur	10½ parts,
	Chlorate of potash	23¾ parts,
	Charcoal,	
	Sulphuret of arsenic, āā	1¾ parts.

Mix.

Lilac fire.

℞	Chlorate of potash	49 parts,
	Sulphur	25 parts,
	Dry chalk	20 parts,
	Black oxide of copper	6 parts.

Mix.

Purple fire.

℞	Chlorate of potash	42 parts,
	Nitre,	
	Sulphur, āā	22¾ parts,
	Black oxide of copper	10 parts,
	Sulphuret of mercury	2¾ parts.

Mix.

Red fire.

℞	Dried nitrate of strontia	72 parts,
	Sulphur	20 parts,
	Gunpowder	6 parts,
	Coal dust	2 parts.

Mix.

White fire.

℞	Nitre	46½ parts,
	Sulphur	23 parts,
	Gunpowder	12¼ parts,
	Zinc powder	18 parts.

Mix.

Yellow fire.

℞	Dried nitrate of soda	74½ parts,
	Sulphur	19½ parts,
	Charcoal	6 parts.

Mix.

Some of these compositions are liable to undergo spontaneous combustion, when kept for some time, even when enclosed in bottles. Serious accidents have arisen from this cause.

QUINA. *Quinine.*

A bitter alkaloid procured from cinchona bark. It does not crystallize with the same facility as some of the other alkaloids, but may be obtained in small white needles. When required in its pure state, it is obtained by precipitating one of the salts of quina, such as the sulphate, with ammonia.

QUININE, AMORPHOUS.

Professor Liebig has applied this name to the part of quinoidine which is soluble in ether.

A patent has been taken out, by Mr. Bullock, for the preparation of *Amorphous quinine* in this country; the process consists in treating *quinoidine* with ether, and evaporating the ethereal solution to dryness.

QUINOIDINE. *Chinoidine.*

A dark brown or black substance, usually in masses having somewhat the appearance of aloes, which is obtained by precipitation, on adding an alkali to the dark-coloured mother-liquor remaining after the crystallization of sulphate of quinine. It usually contains a good deal of cinchonine, some crystallizable quinine, and the products of the decomposition of these and probably other bodies by the action of heat and other agencies.

QUINÆ ACETAS. *Acetate of quinine.*

Dissolve quina in diluted acetic acid to neutralization, with the aid of heat, and gently evaporate the solution until crystals are formed. It crystallizes in white, shining, satiny, acicular crystals, which are difficultly soluble in cold, but readily soluble in hot water.

QUINÆ CITRAS. *Citrate of quinine.*

This salt may be made in the same way as the acetate, only substituting citric for acetic acid; or it may be obtained by double decomposition, on mixing hot solutions of sulphate of quina and acid citrate of soda, when the citrate of quinine is deposited as the mixture cools. It forms white needle-shaped prisms, which are sparingly soluble in water.

QUINÆ FERROCYANAS. See *Ferri et quinæ cyanidum.*

QUINÆ LACTAS. *Lactate of quinine.*

Dissolve quina in diluted lactic acid to neutralization, with the aid of heat, and leave the solution to evaporate spontaneously in a shallow vessel, exposed in a warm room, until crystals are formed.

QUINÆ DISULPHAS. *Disulphate of quina.*

Lond. Ph. 1836.

℞	Heart-leaved cinchona bark bruised	℔vij.
	Sulphuric acid	℥ix.
	Purified animal charcoal	ʒij.
	Hydrated oxide of lead,	
	Solution of ammonia,	
	Distilled water, āā	q. s.

Mix 4 ounces and 2 drachms of sulphuric acid with 6 gallons of distilled water, and to these add the cinchona; boil for an hour and strain. What remains, boil for an hour in acid and water mixed in the same proportion, and again strain. Lastly, boil down the cinchona in 8 gallons of distilled water for three hours and strain. What remains wash with boiling distilled water frequently renewed. Add oxide of lead, while moist, to the mixed liquor, even to saturation. Pour off the supernatant liquor, and wash what is thrown down with distilled water. Boil down the liquor for a quarter of an hour, and strain; then add gradually solution of ammonia to throw down the quina. Wash this till nothing alkaline can be perceived. Let that which remains be saturated with the remainder of the sulphuric acid diluted. Lastly, digest with 2 ounces of animal charcoal, and strain. Finally, all the charcoal being washed away, evaporate the liquor cautiously, that crystals may be obtained.

Note.—Totally dissolved in water, especially when mixed with an acid. Quina is thrown down by ammonia, the liquor being evaporated, what remains ought not to taste of sugar. 100 parts of disulphate of quina lose 8 to 10 parts of water with a gentle heat. It is totally consumed by fire. Chlorine first added to it, and afterwards ammonia, it becomes green.

Edin. Ph. 1841. *Quinæ sulphas.*

℞	Yellow bark, in coarse powder	℔j.
	Carbonate of soda	℥viij.
	Sulphuric acid	f℥ss.
	Purified animal charcoal	ʒij.

Boil the bark for an hour in 4 pints of water, in which half the carbonate of soda has been dissolved; strain and express strongly through linen or calico; moisten the residuum with water and express again, and repeat this twice. Boil the residuum for half an hour with 4 pints of water and half the sulphuric acid. Strain, express strongly, moisten with water, and express again. Boil the residuum with 3 pints of water and a fourth part of the acid; strain and squeeze as before. Boil again the residuum with the same quantity of water and acid; strain and squeeze as formerly. Concentrate the whole acid liquids to about a pint; let the product cool; filter it; and dissolve in it the remainder of the carbonate of soda. Collect the impure quina on a cloth, wash it slightly, and squeeze out the liquor with the hand. Break down the moist precipitate in a pint of distilled water, add 1 fluid scruple of sulphuric acid, heat it to 212°, and stir occasionally. Should any precipitate retain its gray colour, and the liquid be neutral, add sulphuric acid drop by drop, stirring constantly, till the gray colour disappears. Should the liquid redden litmus, neutralize it with a little carbonate of soda. Should crystals form on the surface, add boiling distilled water to dissolve them. Filter through paper, preserving the funnel hot; set the liquid aside to crystallize; collect and squeeze the crystals; dissolve them in a pint of distilled water heated to 212°; digest the solution for fifteen minutes with the animal charcoal; filter, and crystallize as before. Dry the crystals with a heat not exceeding 140°. The mother-liquors of each crystallization will yield a little more salt by concentration and cooling.

Note.—A solution of 10 grains in a fluidounce of distilled water, and two or three drops of sulphuric acid, if decomposed by a solution of half an ounce of carbonate of soda in two waters, and heated with the precipitate, shrinks and fuses, yields on cooling a solid mass, which when dry weighs 7·4 grains, and in powder dissolves entirely in solution of oxalic acid.

Dubl. Ph. 1826. *Quininæ sulphas.*

℞	Yellow bark, coarsely powdered	lbiv.
	Distilled water	Oviij.
	Dilute sulphuric acid	℥ij.

Mix, and digest them for four hours in a proper vessel with a superior heat, frequently shaking, then strain; mix again what remains of the bark with a little quantity of water, and strain, and do so a third time; having mixed the liquors, add to to them as much fresh burnt and slaked lime as will be sufficient to saturate the acid; by means of a paper filter separate the precipitate; to this add three pints of rectified spirit, digest them together for six hours, frequently shaking, and filter; digest again the residual powder with an equal quantity of rectified spirit, and filter. Do this a third time. Having mixed the spirituous liquors, evaporate almost to dryness in a water-bath. To the residuum, add by degrees as much dilute sulphuric acid as will make the acid slightly in excess in the liquor; then by evaporation and cooling let crystals form.

Med. uses. One of the most valuable tonics in use, as it possesses most of the virtues of the cinchona, freed from the inert woody fibre. *Dose.* Gr. ss to gr. v.

Quinæ hydrochloras, *Hydrochlorate of quinine. Muriate of quinine.*

Dissolve quina in diluted hydrochloric acid to neutralization, and then evaporate until crystals are formed. It may also be obtained by double decomposition, on adding solution of sulphate of quina to solution of chloride of barium, hot, as long as any precipitate is formed, then filtering it, and evaporating the clear solution until it crystallizes. It forms fine, needle-shaped, silky crystals, of a mother-of-pearl lustre.

Quinæ nitras. *Nitrate of quinine.*

This salt may be obtained, like the hydrochlorate, either by neutralizing dilute nitric acid with quina, or by the decomposition of nitrate of baryta and sulphate of quinine. It is at first a fluid oil-like mass, which gradually becomes solid. In union with water it forms crystals. It dissolves with difficulty in water, but readily in alcohol.

Quinæ phosphas. *Phosphate of quinine.*

This salt may be formed in the same way as the acetate, only substituting phosphoric for acetic acid. It resembles the hydrochlorate in appearance.

Quinæ sulphas neutralis. *Neutral or soluble sulphate of quinine.*

℞	Disulphate of quina . . .	℥j.
	Diluted sulphuric acid . .	fʒv.
	Water	℥x.

Mix the disulphate of quinine with the water in a wedgwood dish, add the acid, and apply heat until it is dissolved; then evaporate that crystals may be formed.

Quinæ valerianas, *Valerianate of quinine.*

Add a concentrated alcoholic solution of quina to a cold aqueous solution of valerianic acid to neutralization, then put the solution to evaporate spontaneously, or by the aid of a very gentle heat, until crystals are formed.

Ratafia. A French term indicating a sweet aromatic spirituous liquor. Ratafias are made by maceration, by distillation, or with the juice of fruits.

Ratafia d'angelique.

℞ Angelica seeds	ʒj.
Stalks of angelica,	
Bitter almonds, blanched, āā	℥iv.
Brandy, or proof spirit	Oxij.
Sugar	lbij.

Macerate for four days, strain, and filter.

Ratafia d'anis.

1.

℞ Aniseed	℥ij.
Brandy, or proof spirit	Oiv.
Sugar	℥x.

Macerate for four days, strain, and filter.

Huile d'anis.

2.

℞ Aniseed	℥ij.
Rectified spirit	Oiv.

Macerate for four days, and strain, then add,

Simple syrup	lbiv.
Tincture of vanilla q. s. to flavour it.	

Ratafia de café.

℞ Roasted coffee, ground	lbj.
Brandy, or proof spirit	cong. j.
Sugar	℥xx.

Macerate for four days, strain, and filter.

Ratafia de cassis.

℞ Black currants	lbvj.
Cloves	ʒss.
Cinnamon	ʒj.
Proof spirit	Oxviij.
Sugar	lbiiiss.

Macerate for a week, and strain.

Ratafia de cerises.

℞ Morello cherries, with their kernels bruised	lbviij.
Proof spirit	Oviij.
Sugar	lbiss.

Macerate for a week, and strain.

Ratafia de chocolat.

℞ Chocolate or cacao seeds, roasted	lbj ℥viij.
Proof spirit	conj. j.

Macerate for a week, and strain, then add,

Sugar	lbj ℥viij.
Tincture of vanilla q. s. to flavour it.	

Ratafia de coings.

℞ Juice of quinces	Ovj.
Cinnamon	ʒiij.
Coriander seed	ʒij.
Cloves	gr. xv.
Mace	ʒss.
Bitter almonds	ʒvj.
Rectified spirit	Oiij.
Sugar	lbij ℥viij.

Macerate for a fortnight, and strain.

Ratafia de framboises.

℞ Raspberries	lbviij.
Proof spirit	Oiv.
Sugar	℥xij.

Macerate for four days, and strain.

Ratafia de geniévre.

℞ Juniper berries	℥ij.
Proof spirit	Oiv.
Sugar	℥x.

Macerate for a week, and strain.

Ratafia de brou de noix.

℞ Young walnuts, unripe	No. 60.
Brandy	Oiv.
Sugar	℥xij.
Mace, cinnamon, cloves, āā	gr. xv.

Macerate for a month, press out the liquor, and strain it. It should be kept for two or three years.

Ratafia de noyau.

℞ Peach or apricot kernels, bruised	No. 120.
Proof spirit	Oiv.
Sugar	℥x.

Macerate for a week, and strain.

Ratafia d'œillets.

℞	Clove pink petals	lbiv.
	Cinnamon, Cloves, āā	gr. xv.
	Proof spirit	cong. j.
	Sugar	lbj.

Macerate for a week, and strain.

Ratafia d'ecorçe d'orange.

℞	Fresh peel of Seville oranges	℥iv.
	Proof spirit	conj. j.
	Sugar	lbj.

Macerate for four days and strain.

Ratafia de fleurs d' oranges.

℞	Fresh orange flowers	lbij.
	Proof spirit	cong. j.
	Sugar	lbj ℥viij.

Macerate for four days, and strain.

Ratafia de Tolu.

℞	Balsam of Tolu	℥ij.
	Rectified spirit	Oj.
	Boiling water	Oiij.
	Sugar	lbj. ℥viij.

Dissolve the balsam in the spirit, and the sugar in the water, and mix the two solutions.

Ratafia à la violette.

℞	Orris root	ʒij.
	Proof spirit	Oiv.
	Sugar	lbj ℥viij.

Macerate for four days, and strain. It may be coloured with cochineal.

REGULUS, (from *rex*, *regis*, a king). A name originally given by the alchemists to metallic bodies when separated from other substances by fusion, from their expectation of finding gold, the *king* of metals, at the bottom of the crucible; hence the name *Regulus of antimony*, of *Cobalt*, &c.

RENNET. A pickle consisting of the stomachs of calves, preserved in brine or dry salt.

RESINA CANNABIS INDICÆ. *Cannabine. Resin of Indian hemp.*

Messrs. T. and H. Smith.

Digest lbij of bruised Indian hemp or gunjah in several repeated quantities of warm water, pressing the plant after each operation. Then digest the plant in a solution of lbj of carbonate of soda in water; pour off the liquor and wash the plant with water until it passes colourless. Dry the p and macerate it in rectified spirit, or treat it with the spirit by percolation. To the spirituous solution add ℥ij of quick-lime slaked and mixed with as much water as will give it the consistence of cream. Filter the mixture and add to it f℥ij of oil of vitriol diluted with a little water; again filter. Recover the greater part of the spirit by distillation, and to that which remains add three or four times its volume of water to precipitate the resin, which is to be washed with water until it comes away tasteless. The resin is now to be carefully dried.

RESINA JALAPÆ. *Resin of jalap.*

Several methods have been proposed for obtaining this resin. The best appears to be that which consists in treating jalap with rectified spirit and then distilling off the spirit. The tincture before evaporation is sometimes decolourized by animal charcoal; and instead of evaporating the solution to dryness, it is sometimes evaporated until the greater part of the spirit is recovered, and then water added to precipitate the resin.

RHEUM USTUM. *Burnt rhubarb. Toasted rhubarb.*

Heat powdered rhubarb in an iron or earthen vessel, constantly stirring it until it assumes a dark brown colour, then cover the vessel closely until it is cold.

Rob. (Arabic, for dense.) A term formerly applied to inspissated juices.

Rob dyacaryon. *Rob of walnuts.*

℞	Juice of green walnut husks .	lbiv.
	Honey	lbij.

Boil until reduced to the consistence of clarified honey.

Rob diamorum. *Rob of mulberries.*

℞	Juice of mulberries . . .	lbiv.
	Honey	lbij.

Boil until reduced to the consistence of clarified honey.

Rob sambuci. *Rob of elderberries.*

℞	Juice of elderberries . . .	lbiv.
	Sugar	lbj.

Boil until reduced to the consistence of clarified honey.

Saccharum. *Sugar.*

A sweet substance existing in animal and vegetable secretions, and also obtained by the action of chemical agents on starch, gum, and other organic bodies.

There are two principal kinds of sugar, which differ from each other in composition and in some of their properties. These are distinguished as *Cane-sugar*, and *Grape sugar;* the sugar obtained from the *sugar-cane*, *Saccharum officinarum*, being taken as the type of the former, and that obtained from the grape, *Vitis vinifera*, as the type of the latter.

Each of these kinds of sugar is capable of existing in two different conditions, as *crystallizable* and as *uncrystallizable* sugar.

Cane-sugar, is procured in greatest abundance from the sugar-cane. Nearly all the sugar consumed in this country is derived from this source. The juice of the canes is usually extracted by submitting them to pressure between horizontal grooved rollers; it is then clarified by heat, and free acid neutralized with lime. The clarified juice is immediately concentrated by evaporation, and run into wooden vessels to crystallize. The crystallized sugar, thus obtained, is called *Muscovado, or Raw sugar;* the uncrystallizable portion is called *molasses.*

The concentration of the cane-juice is effected in some of the West Indian islands, by evaporation *in vacuo*, when a larger proportion of crystallizable sugar, and of a better quality, is obtained, than is the case when the evaporation is conducted in an open pan. This process being hitherto principally confined to the island of Demerara, the sugar so obtained is called *Demerara crystallized sugar.*

Sugar is chiefly imported into this country in the state of

Raw sugar, and *Molasses.* From the molasses a considerable quantity of crystallized sugar is obtained in this country, and the uncrystallizable portion then remaining, constitutes what is called *Treacle.*

Raw sugar is purified by the process called *sugar refining.* This process consists in dissolving the sugar; neutralizing the acid with lime; boiling it with *Bullock's blood*, or a substance called *Finings*, consisting of *Hydrate of alumina* and *Sulphate of lime;* passing the syrup through a stratum of *Animal charcoal*, to remove the colouring matter; concentrating the decolourized syrup in a *vacuum pan;* putting it to crystallize in *conical moulds;* and removing the last portions of colouring matter, by allowing a solution of pure sugar to percolate through the conical masses, or loaves.

Cane-sugar is extensively made in France from the *Beetroot*, the juice of which is submitted to a process similar to that above described.

In the United States of America, and in Canada, sugar is obtained from the juice of the maple-tree, (*Acer saccharinum*, Linn.) The juice is procured by boring holes about three-fourths of an inch in diameter, to the depth of half an inch or an inch into the alburnum of the trunk of the tree, 18 or 20 inches above the ground. From these holes the juice flows into vessels placed for the purpose of collecting it. The sugar is extracted from the juice in a similar manner to that adopted with the cane juice. This sugar also comes under the denomination of *Cane-sugar.*

In the East Indies sugar is obtained from the kitul tree, (*Caryota urens*); from the cocoa-nut tree, (*Cocos nucifera*); and from the palmyra tree, (*Borassus flabelliformis*). The impure sugars obtained from these sources are called *jaggeries.*

In China, sugar is obtained from the *Saccharum sinense*, which is said to yield a richer juice than the cane used in our plantations.

A large grass, *Holcus cafer*, brought from the South of Africa, has been cultivated in some parts of Italy, Bavaria, and Hungary, as a source of sugar, which it is said to yield in great abundance.

The fruit of the strawberry-tree (*Arbutus unedo*) has been found to yield one-fifth of its weight of sugar.

Sugar-candy, Saccharum candum, is cane-sugar slowly crystallized from a solution. There are three kinds of this commonly made, *the brown, the white*, and *the red. Brown sugar-candy* is obtained from a saturated solution of unrefined sugar, by leaving it in a warm place, at a temperature from 90° to 100° Fahr., with pieces of stick or string left in the solution to promote crystallization. *White sugar-candy*, is obtained in like manner from a solution of refined sugar. *Red sugar-candy* is crystallized from a solution of refined sugar that has been coloured with cochineal.

Sugar-candy being longer in dissolving than common sugar, is on this account preferred, in cases of cough, to keep the throat moist.

Grape-sugar. Glucose. Sugar obtained from grapes differs, as already stated, from that procured from the other sources above alluded to. The juice of ripe grapes is called *must.* Must, boiled to two-thirds, is called *carenum.* When boiled to one-half, it is called *sapa.* On further concentration it will yield a granular sugar, which is less soluble in water, and has less power of sweetening, then cane-sugar.

Grape-sugar may be obtained from many other sources besides the grape. It constitutes the sweetening principle in many of the fruits and other parts of vegetables grown in our climate. Thus apples, pears, gooseberries, currants, &c., abound in this kind of sugar. It constitutes also the sugar of Diabetes.

The most economical method of obtaining grape-sugar, is by acting on starch or lignin with sulphuric acid. Large quantities of sugar have been thus made in this country. Linen rags have been used for making sugar by this process.

Grape-sugar cannot be obtained in a regular crystalline form like cane-sugar. When crystallized it assumes the cauliflower form, consisting of small tufts of crystals.

Cane-sugar is capable of being converted into grape-sugar by the action of chemical agents. Thus on boiling cane-sugar with diluted acids it is converted into grape-sugar. Boiling alone, when long continued, will effect this change.

Both cane and grape-sugar exist in the uncrystallizable as well as the crystallizable condition; and the crystallizing power of sugar may be destroyed by the action of heat and of chemical agents.

Barley-sugar is a species of uncrystallizable sugar. It is made by boiling a strong syrup until the crystallizing power of the sugar is destroyed; or by promoting this object by the addition of a little cream of tartar, or tartaric acid. Infusion of malted barley was formerly used instead of an acid, and hence the name, *barley-sugar.*

Mushroom-sugar. A particular kind of sugar is obtained from some species of mushrooms, which is distinguished by the above name.

SACCHARUM LACTIS. *Sugar of milk.*

Clarify common whey with white of egg, then evaporate it with the heat of a water-bath until it crystallizes on cooling, and put it in a cold place that crystals may form. The crystallization is sometimes promoted by putting pieces of stick or string into the solution, round which the crystals are deposited.

Sugar of milk is imported into this country from Switzerland, where it is made on the large scale.

SACCHARUM PENIDIUM. Lond. Ph. 1677. *Saccharum Hordeatum.* Lond. Ph. 1721. *Penidium. Barley-sugar.*

Lond. Ph. 1721.

Dissolve sugar in a decoction of barley, briskly beat it up with white of egg, and boil it over a slow fire, frequently skimming it; then strain it through flannel, and again set it over the fire to boil slowly until large bubbles are formed during the ebullition, and, on taking some of it out of the pan, it is found not to stick to the teeth. Remove it from the fire, and when the bubbles have subsided, pour it on to a marble slab, previously rubbed over with oil of almonds, and as it tends to spread out, turn the extremities back towards the centre, until it acquires the consistence of thick turpentine. It is now to be suspended by a hook attached to some convenient place, and with hands covered with starch, it is to be dexterously pulled out into thin, thick, short, or long pieces, at pleasure, and laid on a plate to harden.

SACCULUS. (Diminutive of *saccus*, a bag.) *A sachet.* A small bag for containing substances which are used on account of their effluvia.

Sachets are principally employed for communicating agreeable perfumes from dry vegetable substances to wearing apparel or furniture. The substances put into them are similar to those used in making *pot pourrie*, only that they are in powder. The following may be taken as a specimen:—

Sachet powder.

℞ Powdered cloves,	
Powdered cassia, āā . .	℥j.
Powdered orris root . .	℥iss.
Powdered yellow sandal wood .	ʒj.
Otto of roses . . .	gtt. xxiv.
Oil of lavender,	
Oil of bergamot, āā . . .	ʒj.
Musk	gr. vj. Mix.

SAL GEMMÆ. *Rock salt.* Native chloride of sodium.

SAL LIMONUM. *Salt of lemons.*

℞ Salt of sorrel or quadroxalate of potash .	2 parts,
Cream of tartar	1 part. Mix.

SAL POLYCHRESTUS GLASERI. *Glaser's polychrest salt.*

Prepare *Potassæ sulphas cum sulphure* according to the process described at page 920, and as soon as the deflagration is over, raise the heat, keep the mass in fusion for some time, pour it out, dissolve it in water; filter, and evaporate the solution, that crystals may form as it cools.

SAL PRUNELLÆ. *Sore-throat salt.*

Fused nitrate of potash cast in moulds, so as to form either globular or square cakes.

SALICINA. *Salicine.*

Codex, 1837.

Make a strong decoction of willow bark; strain; add to it a milk of lime, to throw down the colouring matter; filter the liquor, evaporate it to the consistence of a syrup; then add a sufficient quantity of alcohol, at sp. gr. 847, to throw down the gummy matter; filter again; separate the alcohol by distillation. The residue of this distillation, sufficiently evaporated and put into a cool place, will deposit the salicine, which will crystallize in flattened needles.

To purify it, it will be necessary to dissolve it in boiling water, to add to it a little animal charcoal, to filter and make it crystallize on cooling.

Pure salicine presents itself in fine flattened needles, somewhat pearly; its taste is bitter, and resembles that of willow; it is neither acid nor alcaline; burnt on a platinum plate, it leaves no residuum.

SANDIVER. *Glass gall.*

A saline scum that rises to the surface of the melted glass in the melting pot. It consists of sulphate of soda, sulphate of lime, &c.

SAPO. *Soap.*

A combination of a fatty acid or resin with an alkali, used for the purposes of washing, &c. The acids which usually enter into the composition of soaps are the stearic, margaric, and oleic acids, and those existing in common resin and in palm oil. Potash and soda are the alkalies used.

Soaps may be divided into two kinds, *hard soaps* and *soft soaps*, the former being made with soda, the latter with potash. In the London Pharmacopœia, 1836, the term *Sapo* is applied to indicate "soap made of olive oil and soda;" and *Sapo mollis*, "Soap made of olive oil and potash."

HARD SOAPS.

Castile soap. Sapo Castiliensis. Sapo Hispanicus. The soap sold under this name is partly imported and partly made in this country. It is, or ought to be, made from olive oil and soda. It is met with in two states, white and mottled. Of these the white is the most pure; the other has the mottled character given to it, by adding a solution of sulphate of iron to the soap while still fluid, and after being poured into the moulds.

Curd soap. The best of the white soaps used for domestic purposes. It is made from tallow and soda.

Common white soap. This is made from tallow, bleached palm oil, and other kinds of fat, with soda. It differs from the preceding kind principally in the quality of the fat used.

Mottled soap. This is one of the two last-named soaps, mottled in the same way as Castile soap. The mottling is said to be the best security against the adulteration of the soap after it leaves the manufactory.

Yellow soap. In the manufacture of this soap, resin and sometimes palm oil is mixed with the tallow, which are saponified with soda.

TOILET SOAPS.

These are made by mixing essential oils, colouring matters, and sometimes other ingredients, with the best curd soap.

The superiority of a toilet soap depends principally on the quality of the rough soap used in making it. These soaps are generally named according to the predominant scents imparted to them.

Transparent soap.

Mix equal parts of the best curd soap in thin shavings, and rectified spirit of wine, apply the heat of a water-bath until the soap is perfectly dissolved, then scent it according to fancy, and colour it with burnt sugar or tincture of turmeric, Pour it into moulds, and leave it exposed to the air for several weeks to harden.

Windsor soap, white. This is merely the best curd soap scented with oils of caraways, lavender, and origanum, and tincture of musk.

Windsor soap, brown. This differs from the preceding in being coloured with burnt sugar.

Wash balls. These differ only from other kinds of toilet soap, in being usually mottled or streaked with different colours, in a particular manner. This is done by mixing portions of the soap, previously scented, with powdered blue, powdered bole, or other colouring matters of this kind, and then, the soap being slightly softened by heat, mixing the different coloured masses together.

SOFT SOAPS.

Almond soap. Sapo amygdalinus. Made by saponifying oil of almonds with solution of potash.

Black soap. A very inferior soft soap, made with fish oils and refuse grease, saponified with potash, and sometimes coloured with lamp-black.

Common soft soap. Made with fish oils, tallow, &c., saponified with potash.

Naples soap. This soap is imported from Naples. It is supposed to be made from olive oil and potash.

MEDICATED SOAPS.

Sapo Crotonis. Croton oil soap.

1.

℞	Croton oil	2 parts.
	Solution of potash . . .	1 part.

Rub them together until they combine, without the application of heat.

2.

Croton oil saponified with potash, or with soda, in the usual way, with heat.

Sapo guaiacinus. Guaiacum soap.

Pharm. Boruss.

Mix one part of solution of potash with two parts of water, heat the mixture to the boiling point, then stir in as much powdered guaiacum resin as can be made to dissolve; strain the liquor, and evaporate it to a pilular consistence.

SAPO JALAPINUS. *Jalap soap.*

Ph. Boruss.

℞	Resin of jalap,	
	Castile soap, āā . . .	℥ij.
	Rectified spirit of wine . .	q. s.

That by digestion they may be dissolved. Then evaporate to the consistence of a pill-mass.

SAPO STIBIATUS. *Antimonial soap.*

Ph. Boruss, 1813.

℞	Golden sulphuret of antimony . .	℥j.

Dissolve by digestion in a sufficient quantity of solution of caustic potash. In the liquor, diluted with three times the quantity of distilled water, dissolve of

Castile soap, when scraped . . .	℥vj.

Let the whole evaporate by a gentle heat to the consistence of a pill-mass; adding, if the mass is still red, as much of the solution of caustic potash as may suffice to give it an ash (or gray) colour.

SAPO TEREBINTHINÆ. *Soap of essential oil of turpentine. Starkey's soap.*

Ratier and Henry's Ph.

℞	Subcarbonate of potash, perfectly dry,	
	Essential oil of turpentine,	
	Venice turpentine, āā . .	equal parts.

Triturate the subcarbonate of potash in a mortar first with the essential oil, then the turpentine. When these substances have attained the proper consistence, porphyrize them, and preserve the soap in an earthenware vessel.

SAPONINE. *Ganteine. Paste for cleaning gloves.*

℞	Powdered soap	250 parts.
	Solution of chloride of potash	165 ,,
	Solution of ammonia	10 ,,
	Water	155 ,,

Dissolve the soap in the water, with heat, and as the mixture cools add the other ingredients. A small quantity of this is to be rubbed over the glove with a piece of flannel, until the dirt is removed.

SAUCES. Condiments used for flavouring or seasoning food.

Chetney sauce.

℞	Stoned raisins	℥iv.
	Sour apples, or crabs	℥viij.
	Brown sugar	℥iv.
	Powdered ginger,	
	Common salt,	
	Cayenne pepper, āā	℥ij.
	Garlic	℥j.
	Vinegar	q. s.

Pound the solid ingredients together, in a mortar, adding a little vinegar from time to time, until the whole is reduced to a pulpy mass, then add enough vinegar to reduce it to the consistence of cream, and bottle it for use.

Coratch.

℞	Mushroom catsup	℔vj.
	Walnut catsup	℔j.
	Indian soy,	
	Chillie vinegar, āā	℥iv.
	Essence of anchovies	℥j.

Mix.

Fish sauce.

℞	Port wine	cong. j.
	Mountain wine	Oij.
	Walnut catsup	Oiv.
	Anchovies, with the liquor,	℔ij.
	Lemons	No. viij.
	Shallots	No. xxxij.
	Cayenne pepper	℥ij.
	Scraped horseradish	℔ij.
	Mace	℥j.
	Flour of mustard	℥viij.

Boil gently, strain, and bottle.

Kitchiner's relish.

℞	Black pepper,	
	Salt, āā	℥j.
	Powdered allspice,	
	Scraped horseradish,	
	Shallots, cut small, āā	℥ss.
	Walnut pickle, or Mushroom catsup	Oj.

Macerate for fourteen days, and strain.

Sauce piquante.

℞	Soy	℥j.
	Port wine,	
	Cayenne pepper, āā	℥ij.
	Best vinegar	Oj,

Macerate for a week, and strain.

Quin's sauce.

℞	Walnut pickle,	
	Port wine, āā	Oj.
	Mushroom catsup	Oij.

Anchovies,	
Shallots. āā	No. xxiv.
Soy	Oss.
Cayenne pepper	ʒij.

Boil for ten minutes, strain, and bottle.

Soy.

Boil lbiv of the seeds of *Dolichos soja* with water until they become soft, then add lbiv of bruised wheat; keep the mixture in a warm place for twenty-four hours, then add lbiv of common salt, and lbviij of water; put the mixture into a stone jar, and cork it up for two or three months, then press out the liquor.

The best soy is imported from China.

Tomato sauce.

℞	Bruised tomatoes	cong. j.
	Salt	℥viij.

Mix, and after three days squeeze out the juice. To each half gallon of the juice add,

Shallots	℥iv.
Black pepper	ʒij.

Boil for half an hour, strain, and add,

Mace, Allspice, Ginger, Nutmegs, āā	℥ss.
Coriander seed, Cochineal, āā	ʒij.

Simmer gently for half an hour, strain, and when cold, bottle it.

SCOURING DROPS, for removing grease spots from silks, &c.

℞	Distilled essence of lemon	℥ij.	
	Camphor	℥j.	
	Rectified spirit	℥vj.	Mix.

SEALING-WAX.

The basis of the best sealing-wax is shellac, but inferior sorts are made with common resin. The cowdie resin has been recently used, and answers better than turpentine resin.

Red sealing-wax.

1.

℞	Shellac	℔ij.
	Venice turpentine	℔j.
	Vermilion, or Best dichromate of lead	℔iss.

Melt the shellac and turpentine together, with heat, and add the pigment as the mixture cools.

2.

℞	Shellac	℔ij.
	Yellow resin, or Cowdie resin	℔iv.
	Venice turpentine	℔iss.
	Dichromate of lead	℔ij.

Mix as No 1.

Black sealing-wax is made in the same way as the red, only substituting the best lampblack for vermilion or dichromate of lead. In like manner other colours are imparted by varying the pigment, and using chromate of lead, verdigris, green verditer, &c.

Gold sealing-wax, is made by using gold-coloured talc, or bisulphuret of tin.

Marbled sealing-wax.

Melt in separate vessels a portion of wax of each colour intended to be mixed, and when they are partly cooled, mix them together, slightly stirring the mixture with a rod.

Soft sealing-wax.

℞	Bees'-wax	℔iv.
	Venice turpentine	℔j.

Levigated bole, sufficient to give the required colour.

Bottle wax.

℞	Black resin	℔vj.
	Bees' wax	℔ss.
	Ivory, or Lamp-black	℔iss.

Mix with heat.

Venetian red, red lead, or bole, may be substituted for lamp-black.

SERUM LACTIS ACIDUM. *Acid whey.*

Plenck's Ph.

℞	Cow's milk, deprived of the cream	℔ij.
	Cream of tartar	ʒj.

After one boil let it be strained through bibulous paper. Coagulation may also be effected with two spoonfuls of vinegar or of lemon-juice.

SERUM LACTIS ALUMINOSUM. *Aluminous whey.*

Plenck's Ph.

℞	Cow's milk, boiling	℔j.
	Crude alum	ʒj.

When the milk has coagulated let the whole be strained.

SERUM LACTIS AURANTIATUM. *Oranged whey.*

Plenck's Ph.

℞	Cow's milk, boiling	℔j.

Let the juice of half or of an entire orange be digested in it, with a portion of the peel. When coagulation has taken place let it be strained.

SERUM LACTIS CEREVISIATUM. *Whey with beer.*

℞	Cow's milk, boiling	℔j.
	Good beer	℥iij.

Boil together until coagulation has taken place: then strain.

SERUM LACTIS DULCE. *Sweet whey.*

Plenck's Ph.

℞	Cow's milk, deprived of its cream	℔iv.
	A piece of prepared calf's renne	

Let them be put in a warm place, until the caseine has coagulated; then separate the serum.

SERUM LACTIS TAMARINDINATUM. *Whey with tamarinds.*

Plenck's Ph.

℞	Cow's milk, boiling . . .	℔j.
	Tamarinds	℥ij.

Boil them together until coagulation has taken place.

SERUM LACTIS VINOSUM. *Wine whey.*

Plenck's Ph.

℞	Cow's milk, boiling . . .	℔j.
	Rhenish wine	℥ij.

The milk having coagulated, let the whey be strained.

SHERRY-COBLER.

A favourite beverage with the Americans; recently introduced to this country.

Half fill a tumbler-glass with clean pounded ice; add a table-spoonful of powdered white sugar, a few strawberries or other similar fruit, bruised, and a wine-glassful or more of sherry wine; mix them together, and as the ice melts, suck the liquor through a straw.

Other wine may be substituted for sherry.

SHERBET. (Arabic.)

A cooling drink used in the East, made of the acidulous juices of fruits, sweetened and flavoured to suit the palate.

SILLABUB.

An agreeable beverage made with milk or cream and wine.

℞	Wine	℥xij.
	Cream	℥iv.
	or	
	New milk	℥xij.

The juice of half a lemon, and some of the peel rubbed with sugar sufficient to sweeten it. A little nutmeg is sometimes added.

Other spirituous liquors besides wine are sometimes used.

WHIPT SILLABUB.

The above "whipt" into a froth.

SNUFF.

A powder used for stimulating the olfactory nerves. It usually consists of tobacco, prepared in different ways, and sometimes mixed with other substances, which are added, either to alter its flavour, or to increase its stimulating properties. The tobacco, previous to its being ground into snuff, is submitted to a kind of fermentation, by leaving it in heaps, wetted with water or with solution of salt, called the *sauce*, which is added from time to time during a period of from one to three months. The flavour and character of the snuff depends in great measure on the way in which this process of fermentation is conducted, and especially the length of time during which it is continued.

Snuffs are of two kinds, which are distinguished as *moist snuffs* and *dry snuffs*.

In grinding the *moist snuffs*, the tobacco is moistened several times during the process, it is said, with some perfumed water, such as rose or orange-flower water: it is also sifted very frequently, to prevent its being reduced to too fine a powder. Solution of sugar, and of carbonate of potash, are sometimes added to prevent the snuff from becoming dry.

In grinding the *dry snuffs*, no moisture is used, but other ingredients are frequently added, such as lime, salammoniac, powdered glass, &c.

Mills are generally employed in powdering snuffs, which are commonly called snuff-mills.

Moist snuffs include *Black* and *Brown rappee*, *Cuba*, *Carotte*, *Prince's mixture*, *Princeza*, &c.

Dry snuffs include *Scotch*, *Irish*, *Welsh*, and *Spanish snuffs*, *Lundyfoot*, &c.

The Tonca bean, either whole or in the form of an essence, musk, ambergris, and many of the volatile oils, are used for scenting snuffs.

SODA PURA. *Pure soda. Hydrate of soda.*

This is prepared in the same way as *hydrate of potash*, only substituting carbonate of soda for carbonate of potash.

SODÆ ACETAS. *Acetate of soda..*

Dubl. Ph. 1826.

℞ Carbonate of soda, any required quantity.
Distilled vinegar, q. s. to saturate the alkali.

Let the filtered liquor evaporate until it shall have attained the specific gravity of 1276.

This salt is made on the large scale in obtaining acetic acid from wood, it being the proximate source of the pure acetic acid.

SODÆ ARSENIAS. *Arseniate of soda.*

Codex.

℞ Nitrate of soda . . .	100 parts,
Arsenious acid . . .	116 parts.

Thoroughly mix the ingredients together; heat them to redness in a Hessian crucible; treat the residue with water; add to it a solution of carbonate of soda until the mixture is alkaline; then evaporate it until crystals shall form on cooling.

SODÆ CARBONAS. *Carbonate of soda.*

Lond. Ph. 1836.

℞ Impure carbonate of soda . .	lb. ij.
Distilled water	Oiv.

Boil the impure carbonate of soda in the water, and strain it while hot. Lastly, set it aside that crystals may be formed.

Note.—When freshly prepared it is translucent, but in an open vessel it in a short time falls to powder. It is totally soluble in water, but not at all in alcohol. It alters the colour of turmeric like an alkali.

Dubl. Ph. 1826.

℞	Barilla, reduced to powder . .	1 part,
	Water	2 parts.

Boil the barilla in the water during two hours in a covered vessel, occasionally stirring it. Strain the liquor, and triturate what remains of the barilla, and again boil it with the same quantity of water; let this be done three times. Let the filtered and mixed washings evaporate in an open iron vessel until the residue is dry, taking care lest, by too great an increase of heat, the remaining saline mass shall again liquefy. Let this be stirred with an iron rod until it shall have become white. Finally, dissolve in hot water, and let the liquor evaporate until it shall have attained the specific gravity of 1220, and let it be exposed to the air when the temperature approaches to that of freezing water, that by cooling crystals may form, which are to be dried and preserved in a stopped vessel. If the salt should not appear sufficiently pure, repeat its solution, and let crystals be again formed.

Use. Antacid. *Dose*, gr. x to ʒss twice or three times a day.

AQUA SODÆ CARBONATIS. *Water of carbonate of soda.*

Dubl. Ph. 1826.

Take of carbonate of soda, any required quantity. Dissolve in water, and let the specific gravity of the liquor be to that of distilled water as 1024 to 1000. A liquor of this specific gravity is prepared by dissolving an ounce of carbonate of soda in a pint of distilled water.

SODÆ CARBONAS EXSICCATA. *Dried carbonate of soda.*

Lond. Ph. 1836.

℞ Carbonate of soda . ℔j.

Apply heat to the carbonate of soda, in a proper vessel, until it is dried, and afterwards heat it to redness. Lastly, rub it to powder.

Note.—In drying this salt, 100 parts of crystals of carbonate of soda yield 62·5 by a strong heat. The remainder is unchanged.

Edin. Ph. 1841.

Heat any convenient quantity of carbonate of soda in a shallow vessel until it is dry, then urge it with a red heat in a crucible, and reduce it to powder when cold.

Dubl. Ph. 1826.

Let the crystals of carbonate of soda be liquefied by heat in a silver crucible and continually stirred, until the water being expelled, the salt shall have become perfectly dry. Let the residual salt, triturated to powder, be preserved in close vessels.

Med. use. Antacid. *Dose.* From 4 to 20 grs.

SODÆ SESQUICARBONAS. *Sesquicarbonate of soda.*

Lond. Ph.

℞	Carbonate of soda	℔vij.
	Distilled water	cong. j.

Dissolve the carbonate of soda in the water, and strain; then pass carbonic acid into the solution to saturation that the salt may subside. Dry this with a gentle heat, wrapped and pressed in cloth.

Note.—Totally dissolved by water. Neither chloride of platina nor sulphate of magnesia, unless heated, throws down any thing from this solution. By a strong fire it is converted into anhydrous carbonate of soda.

SODÆ BICARBONAS. *Bicarbonate of soda.*

Edin. Ph. 1841.

Fill with fragments of marble a glass jar, open at the bottom and tubulated at the top; close the bottom in such a way as to keep in the marble without preventing the free passage of a fluid; connect the tubulature closely, by a bent tube and corks, with an empty bottle, and this in like manner with another bottle filled with one part of carbonate of soda, and two parts of dried carbonate of soda well triturated together, and let the tube be long enough to reach the bottom of the bottle. Before closing the last cork closely, immerse the jar to the top in diluted muriatic acid contained in any convenient vessel; when the whole apparatus is thus filled with carbonic acid gas, secure the last cork tightly, and let the action go on till next morning, or till gas is no longer absorbed by the salt. Remove the damp salt which is formed, and dry it, either in the air without heat, or at a temperature not above 120°.

Dubl. Ph. 1826.

℞	Carbonate of soda	2 parts,
	Water	5 parts.

Dissolve.

Let the liquor be exposed in a suitable apparatus to the stream of carbonic acid gas, which escapes during the solution of white marble in diluted muriatic acid, until it shall have ceased to absorb gas, and let it rest until crystals form; then, with a heat not exceeding 120°, let the liquor evaporate, and crystals be formed by cooling; these are to be mixed with the former, dried, and preserved in a close vessel.

Use. Similar to that of the carbonate. *Dose.* gr. x to gr. xxx.

SODÆ HYPOSULPHIS. *Hyposulphite of soda.*

Codex.

℞	Carbonate of soda, crystallized	320 parts,
	Distilled water	640 parts,
	Sublimed sulphur	40 parts.

Dissolve the carbonate of soda in the water, and mix the sulphur with the solution; pass through it a stream of sulphurous acid gas. When the gas shall be in excess in the liquor, the latter will contain hyposulphite of soda in solution. It is now to be boiled for some minutes, then filtered, gently evaporated to one-third of its volume, and put in a cold place that crystals may form.

Hyposulphite of soda crystallizes in four-sided prisms. Treated with sulphuric acid it disengages sulphurous acid, and sulphur is precipitated.

SODÆ MURIAS PURUM. *Pure muriate of soda.*

Edin. Ph. 1841.

Take any convenient quantity of muriate of soda, dissolve it in boiling water, filter the solution, and boil it down over the fire, skimming off the crystals which form; wash the crystals quickly with cold water, and dry them.

Note.—A solution is not precipitated by solution of carbonate of ammonia followed by solution of phosphate of soda; a solution of 9 grains in distilled water is not entirely precipitated by a solution of 26 grains of nitrate of silver.

SODÆ PHOSPHAS. *Phosphate of soda.*

Edin. Ph. 1841.

℞	Bones burnt to dryness . .	℔x.
	Sulphuric acid . . .	Oij and f℥iv.
	Carbonate of soda . .	q. s.

Pulverize the bones and mix them with the acid; add gradually six pints of water; digest for three days, replacing the water which evaporates; add 6 pints of boiling water, and strain through strong linen: pass more boiling water through the mass on the filter till it comes away nearly tasteless. Let the impurities subside in the united liquors, pour off the clear liquid, and concentrate to six pints. Let the impurities again settle, and to the clear liquor, which is to be poured off and heated to ebullition, add carbonate of soda, previously dissolved in boiling water, until the acid is completely neutralized. Set the solution aside to cool and crystallize. More crystals will be obtained by successively evaporating, adding a little carbonate of soda till the liquid exerts a feeble alkaline reaction on litmus-paper, and then allowing it to cool. Preserve the crystals in well-closed vessels.

Note.—An efflorescent salt; 45 grains dissolved in 2 fluidounces of boiling distilled water, and precipitated by a solution of 50 grains of carbonate of lead in a fluidounce of pyroligneous acid will remain precipitable by solution of acetate of lead.

Lond. Ph. 1836.

Note.—Exposed to the air it slightly effloresces. It is totally dissolved by water, but not by alcohol. What is thrown down from the solution by chloride of barium is white: the precipitate by nitrate of silver is yellow, unless the phosphate of soda has been previously made red hot. Both precipitates are soluble in nitric acid.

SODÆ SULPHAS. *Sulphate of soda.*

Lond. Ph. 1836.

℞ Salt which remains after distillation of hydrochloric acid . . . ℔ij.
Water, boiling . . . . Oij.
Carbonate of soda . . . q. s.

Dissolve the salt in the water; then gradually add as much carbonate of soda as is sufficient to saturate the acid. Boil down until a pellicle appears, and, the solution being strained, set it aside that crystals may be formed. The liquor being poured off, dry them.

Note.—Exposed to the air it falls to powder. Totally dissolved by water, very slightly by alcohol. It does not alter the colour of litmus or turmeric. Nitrate of silver scarcely throws down anything from a dilute solution; nitrate of barytes more, which is not dissolved by nitric acid. 100 parts of this salt lose 55·5 parts by a strong heat.

Edin. Ph. 1841.

℞ Salt which remains after preparing pure muriatic acid lbij.
Boiling water . . . . . Oiij.
White marble, in powder . . . . q. s.

Dissolve the salt in the water, add the marble so long as effervescence takes place, boil the liquid and when neutral filter it; wash the insoluble matter with boiling water, adding the water to the original liquid; concentrate till a pellicle begins to form, and then let the liquid cool and crystallize.

Note.—Not subject to adulteration.

Dubl. Ph. 1826.

Let the salt which remains after the distillation of muriatic acid be dissolved in a sufficient quantity of hot water. Put aside the filtered liquor, that after due evaporation crystals may be formed by slow cooling.

Use. Purgative. *Dose*, ʒss to ℥iss.

SODÆ POTASSIO-TARTRAS. *Potassio-tartrate of soda.*

Lond. Ph. 1836.

℞ Bitartrate of potash, powdered ℥xvj.
Carbonate of soda . ℥xij.
Water, boiling . . Oiv.

Dissolve the carbonate of soda in the boiling water, and add gradually the bitartrate of potassa. Strain the liquor; then apply a gentle heat, until a pellicle floats, and set it aside that crystals may form. The liquor being poured off, dry them. Evaporate the liquor again that it may yield crystals.

Note. Totally dissolved by water. Neither chloride of barium nor nitrate of silver throws down any thing from the (dilute) solution. It does not alter the colour of litmus or turmeric. By sulphuric acid, when added, part of it is converted into bitartrate of potash.

Edin. Ph. 1841. *Sodæ et potassæ tartras.*

℞ Bitartrate of potash . ℥xvj.
Carbonate of soda . ℥xij.
Boiling water . . Oiv.

Proceed with this preparation exactly as for the tartrate of potash.

Note. Entirely and easily soluble in five parts of boiling water; muriatic acid occasions a crystalline precipitate in a strong solution; 37 grains in solution are not entirely precipitated by 43 grains of nitrate of lead.

Dubl. Ph. 1826. *Sodæ et potassæ tartras.*

℞ Carbonate of soda	5 parts.
Bitartrate of potash, reduced to the finest powder	7 parts.
Hot water	50 parts.

To the carbonate of soda dissolved in water gradually add the bitartrate of potash; let the liquor, filtered through paper, evaporate, and set it aside that, by slow cooling, crystals may form.

Use. Purgative. *Dose,* ʒij to ℥j.

SODÆ TARTARIZATUM. *Tartarized soda. Acidulated kali. Lemonated kali.*

℞ Powdered white sugar	℔iv.
„ Bicarbonate of soda,	
„ Tartaric acid, āā	℔ij.
„ Bitartrate of potash	℥j.
Essence of lemon	ʒij.

Dry the powders separately; mix them together, then add the essence of lemon, and keep the mixture in bottles.

SODÆ CHOLEAS. *Choleate of soda.*

This is one of the principal ingredients in ox-gall or bile, which consists essentially of *Choleate of soda*, and cholesterine.

Inspissated ox-gall, or bile. Fel tauri inspissatum.

Evaporate fresh ox-gall by the heat of a water-bath until it assumes a pilular consistence. Thus prepared, it will contain a portion of mucus, in addition to the essential constituents of the bile.

Med. use. It has been used as a tonic, and more recently, on the recommendation of Dr. Allnatt, as a remedy for constipation, administered as a clyster, (ʒij dissolved in Oj of hot water,) or in pills, 5 or 10 grains, two or three times a day.

Purified ox-gall, or bile. Fel tauri purificatum.

Treat the inspissated ox-gall with rectified spirit, which dissolves all but the mucus. The colouring matter may be removed by digesting the solution with a little animal charcoal, or by cautiously adding baryta water which throws down the colouring matter. The colourless solution may now be evaporated to dryness. It will consist of *Choleate of soda* and *Cholesterine.*

Choleate of soda may be separated from the cholesterine by mixing a concentrated alcoholic solution of purified and decolourized ox-gall with twice its volume of ether when the choleate of soda separates in a thick syrupy form, and after being washed with ether may be dried, forming a pulverulent mass like gum arabic.

SODII SULPHO-ANTIMONIATUM. *Schlippe's antimonial salt.*

Strasb. Ph.

℞ Carbonate of soda, crystallized	9 parts.
Water	40 „
Sesquisulphuret of antimony	4 „
Sulphur	1½ „
Milk of lime (2½ parts of lime to 7 water)	10 „

Dissolve the soda in the water; add the other ingredients, boil for 2½ hours, and crystallize.

SOLDER.

A metallic alloy, used for uniting the surfaces of metals. Solders differ in composition according to the kind of metals intended to be united by them.

Solder for tin plate.

℞	Tin	2 parts.
	Lead	1 part.

Mix.

Solder for pewter.

℞	Tin	10 parts.
	Lead	5 „
	Bismuth	1 part.

Mix.

Solder for iron, copper, and brass. Spelter.

℞	Copper,	
	Zinc, āā	p. æ.

Mix.

Solder for zinc and lead.

℞	Lead	2 parts.
	Tin	1 part.

Mix.

Solder for silver.

℞	Silver	5 parts.
	Brass	6 „
	Zinc	2 „

Mix.

Solder for gold.

Silver and gold,
or
Copper and gold.

SOLUTIO ARGENTI AMMONIATI. *Ammoniated solution of silver.*

Edin. Ph. 1841.

℞	Nitrate of silver	44 gr.
	Distilled water	f℥j.
	Aqua ammoniæ, a sufficiency.	

Dissolve the salt in the water, and add the aqua ammoniæ gradually, and towards the end cautiously, till the precipitate at first thrown down is very nearly, but not entirely, redissolved.

SOLUTIO BARYTÆ NITRATIS. *Solution of nitrate of baryta.*

Edin. Ph. 1841.

℞	Nitrate of baryta	40 gr.
	Distilled water	800 „

Dissolve the salt in the water; and keep the solution in well-closed bottles.

This is intended as a test.

SOLUTIO COPAIBÆ ALKALINI. *Alkaline solution of copaiba.*

℞	Copaiba	℥ij.
	Solution of potash	℥iij.
	Water	℥vij.

Boil for a quarter of an hour, put the liquor into an oil separater, let it stand for an hour or two, or until the volatile oil has separated from the aqueous solution; then draw off the latter and preserve it for use.

This solution consists of the resin of copaiba combined with the potash, as a soluble soap, which retains a small portion of volatile oil.

SOLUTIO MORPHIÆ MURIAS. *Solution of muriate of morphia.*

Edin. Ph. 1841.

R	Muriate of morphia	ʒiss.
	Rectified spirit	f℥v.
	Distilled water	f℥xv.

Mix the spirit and water, and dissolve the muriate of morphia in the mixture with the aid of a gentle heat.

SOLUTIO SODÆ PHOSPHATIS. *Solution of phosphate of soda.*

Edin. Ph. 1841.

℞	Phosphate of soda	175 gr.
	Distilled water	f℥viij.

Dissolve the salt in the water, and keep the solution in well-closed bottles.

This is intended as a test.

SOLUTIO PRO ARGENTO. *Solution for whitening silver.*

℞	Bitartrate of potash,	
	Chloride of sodium.	
	Alum, āā	℥j.
	Water	Oiij.

Dissolve.

Plate boiled in this solution acquires a brilliant whiteness.

SOLUTIO MINERALIS. *De Vallenger's solution of arsenic.*

℞	Arsenious acid	2 gr.
	Hydrochloric acid	fʒss.
	Water	f℥j.

Dissolve.

SPICES.

Warm, aromatic substances, used for seasoning.

Ragout spice.

℞	Salt	℔j.
	Flour of mustard,	
	Black pepper,	
	Grated lemon-peel, āā	℔ss.
	Allspice, Ginger,	
	Nutmeg, āā	ʒij.
	Cayenne pepper	℥ij.

Mix.

Sausage spice.

℞	Black pepper	℔v.
	Cloves, Nutmegs, āā	℔iss
	Ginger	℔iiss.
	Aniseed, Coriander seed, āā	℥viij.

Mix.

Savoury spice.

Kidder's.

℞	Cloves,	
	Mace,	
	Nutmegs,	
	Pepper,	
	Salt, āā	℔j.

Mix.

Sweet spice.

Kidder's.

℞	Cloves,	
	Mace,	
	Nutmegs,	
	Cinnamon,	
	Sugar, āā	℔j.

Mix.

SPIRITUS ÆTHERIS AROMATICUS. *Aromatic spirit of ether.*

Lond. Ph. 1824.

℞ Cinnamon	ʒiij.
Cardamom seeds	ʒiss.
Long pepper, Ginger, āā	ʒj.
Spirit of sulphuric ether	f℥xvj.

Macerate for fourteen days in a stoppered bottle, and strain.

SPIRITUS ÆTHERIS NITRICI. *Spirit of nitric ether.*

U. S. Ph. 1840.

℞ Nitrate of potash, in coarse powder	lbij.
Sulphuric acid	lbiss.
Alcohol	Oixss.
Diluted alcohol	Oj.
Carbonate of potassa	℥j.

Mix the nitrate of potash and the alcohol in a large glass retort, and having gradually poured in the acid, digest with a gentle heat for two hours; then raise the heat, and distil one gallon. To the distilled liquor add the diluted alcohol and carbonate of potassa, and again distil one gallon.

SPIRITUS ÆTHERIS SULPHURICI. *Spirit of sulphuric ether.*

Lond. Ph. 1824.

℞ Sulphuric ether	f℥viij.
Rectified spirit	f℥xvj.

Mix.

Edin Ph. 1841.

℞ Sulphuric ether	Oj.
Rectified spirit	Oij.

Mix them. The density of this preparation ought to be ·809.

SPIRITUS ÆTHERIS SULPHURICI COMPOSITUS. *Compound spirit of sulphuric ether. Hoffman's anodyne liquor.*

Lond. Ph. 1836.

℞ Sulphuric ether	f℥viij.
Rectified spirit	f℥xvj.
Ethereal oil	fʒiij.

Mix.

SPIRITUS AMMONIÆ. *Spirit of ammonia.*

Lond. Ph. 1836.

℞ Hydrochlorate of ammonia	℥x.
Carbonate of potash	℥xvj.
Rectified spirit,	
Water, āā	Oiij.

Mix them, and let three pints distil.

Edin. Ph. 1841.

℞ Rectified spirit	Oij.
Fresh-burnt lime	℥xij.
Muriate of ammonia, in very fine powder	℥viij.
Water	f℥viss.

Let the lime be slaked with the water in an iron or earthenware vessel, and cover the vessel till the powder be cold; mix the lime and muriate of ammonia quickly and thoroughly in a mortar, and transfer the mixture at once into a glass retort; adapt to the retort a tube which passes nearly to the bottom of a bottle containing the rectified spirit; heat the retort in a sand-bath gradually, so long as anything passes over, preserving the bottle cool. The bottle should be large enough to contain one-half more than the spirit used.

Dubl. Ph. 1826.

℞	Rectified spirit	Oiij.
	Carbonate of ammonia, coarsely powdered	℥iiiss.

Mix them, and dissolve the salt with a medium heat; then filter the liquor.

The preparation according to the Edinburgh College, differs from the other two, in being a solution of caustic ammonia.

SPIRITUS AMMONIÆ AROMATICUS. *Aromatic spirit of ammonia. Spirit of sal volatile.*

Lond. Ph. 1836.

℞	Hydrochlorate of ammonia	℥v.
	Carbonate of potash	℥viij.
	Cinnamon, bruised,	
	Cloves, bruised, āā	ʒij.
	Lemon-peel	℥iv.
	Rectified spirit,	
	Water, āā	Oiv.

Mix them, and let six pints distil.

Edin. Ph. 1841.

℞	Spirit of ammonia	f℥viij.
	Volatile oil of lemon-peel	fʒj.
	Volatile oil of rosemary	fʒiss.

Dissolve the oils in the spirit by agitation.

Dubl. Ph. 1826.

℞	Spirit of ammonia	Oij.
	Essential oil of lemons	ʒij.
	Nutmegs, bruised	℥ss.
	Cinnamon bark, bruised	ʒiij.

Macerate in a close vessel for three days, shaking occasionally; then distil a pint and half.

Med. use. Stimulant. *Dose*, from 10 drops to a drachm.

SPIRITUS AMMONIÆ FŒTIDUS. *Fœtid spirit of ammonia.*

Lond. Ph. 1836.

℞	Hydrochlorate of ammonia	℥x.
	Carbonate of potash	℥xvj.
	Rectified spirit,	
	Water, āā	Oiij.
	Assafœtida	℥v.

Mix them; then with a slow fire let three pints distil.

Edin. Ph. 1841.

℞	Spirit of ammonia	f℥xss.
	Assafœtida	℥ss.

Break the assafœtida into small fragments, digest it in the spirit for twelve hours, and distil over ten fluidounces and a half by means of a vapour-bath heat.

Dubl. Ph. 1826.

℞	Spirit of ammonia	Oij.
	Assafœtida	℥jʒij.

Macerate in a close vessel for three days, shaking occasionally; then pour off the clear liquor, and distil a pint and half.

Med. use. Stimulant and antispasmodic. *Dose,* half a drachm to a drachm.

SPIRITUS ANISI. *Spirit of anise.*

Lond. Ph. 1836.

℞ Anise, bruised	℥x.
Proof spirit	cong. j.
Water	Oij.

Mix them; then with a slow fire let a gallon distil.

SPIRITUS ANISI COMPOSITUS. *Compound spirit of aniseed.*

Dubl. Ph. 1826.

℞ Aniseeds, bruised,	
Angelica seeds, bruised, āā	℔ss.
Proof spirit	cong. j.

Water, enough to prevent empyreuma.

Macerate for twenty-four hours, and distil a gallon.

Med. use. Stomachic and carminative. *Dose,* ʒss. to ʒiv.

SPIRITUS ARMORACIÆ COMPOSITUS. *Compound spirit of horseradish.*

Lond. Ph. 1836.

℞ Horseradish, sliced,	
Orange-peel, dried āā	℥xx.
Nutmegs, bruised	ʒv.
Proof spirit	cong. j.
Water	Oij.

Mix them; then with a slow fire let a gallon distil.

Dubl. Ph. 1826.

℞ Fresh horseradish root,	
Dried orange-peel, āā	℔j.
Nutmegs, bruised	℥ss.
Proof spirit	cong. j.

Water, sufficient to prevent empyreuma.

Macerate for twenty-four hours, and distil a gallon.

Med. use. Stimulant. *Dose,* ʒj. to ʒiv.

SPIRITUS CARUI. *Spirit of caraway.*

Lond. Ph. 1836.

℞ Caraway, bruised	℥xxij.
Proof spirit	cong. j.
Water	Oij.

Mix them; then with a slow fire let a gallon distil.

Edin. Ph. 1841.

℞ Caraway, bruised	℔ss.
Proof spirit	Ovij.

Macerate for two days in a covered vessel; add a pint and half of water; and distil off seven pints.

Dubl. Ph. 1826.

℞ Caraway seeds, bruised	℔j.
Proof spirit	cong. .

Water, sufficient to prevent empyreuma.

Macerate for twenty-four hours, and distil a gallon.

Med. use. Carminative. *Dose,* ʒj. to ʒiv.

SPIRITUS CASSIÆ. *Spirit of cassia.*

Edin. Ph. 1841.

℞ Cassia, in coarse powder . .	℔j.

Proceed as for the spirit of caraway.

Med. use. Cordial in languor and debility. *Dose,* fʒj to fʒiv, in any proper vehicle.

SPIRITUS CINNAMOMI. *Spirit of cinnamon.*

Lond. Ph. 1835.

℞ Oil of cinnamon . .	ʒij.
Proof spirit . .	cong. j.
Water . . .	Oj.

Mix them; then with a slow fire let a gallon distil.

Edin. Ph. 1841.

℞ Cinnamon in coarse powder .	℔j.

Proceed as for the spirit of caraway.

Dubl. Ph. 1826.

℞ Cinnamon bark, bruised . ,	℔j.
Proof spirit	cong. j.
Water, sufficient to prevent empyreuma.	

Macerate for twenty-four hours, and distil a gallon.

Med. use. Stomachic. *Dose,* fʒj to fʒiv.

SPIRITUS FORMICARUM. *Spirit of ants.*

Pruss. Ph.

℞ Ants . , . . .	℔j.
Rectified spirit	℔j.
Water	℔ij.

Mix, and distil ℔ii.

SPIRITUS JUNIPERI COMPOSITUS. *Compound spirit of juniper.*

Lond. Ph. 1836.

℞ Juniper fruit, bruised .	℥xv.
Caraway, bruised,	
Fennel, bruised. āā .	℥ij.
Proof spirit , .	cong. j.
Water . . .	Oij..

Mix them; then with a slow fire let a gallon distil.

Edin. Ph. 1841.

℞ Juniper berries, bruised .	℔j.
Fennel, bruised,	
Caraway, bruised, āā .	℥iss.
Proof spirit . . .	Ovij.
Water . . .	Oij.

Macerate the fruits in the spirit for two days, add the water, and distil off seven pints.

Dubl. Ph. 1826.

℞ Juniper berries, bruised . .	℔j.
Caraway seeds, bruised,	
Sweet fennel seeds, bruised, āā . .	℥iss.
Proof spirit	cong. j.

Macerate for twenty-four hours, then add as much water as will prevent empyreuma, and distil a gallon.

Med. use. A stimulating diuretic; a useful adjunct to other diuretics. *Dose*, ʒj. to ʒiv.

SPIRITUS LAVANDULÆ. *Spirit of lavender.*

Lond. Ph. 1836.

℞ Lavender, fresh	℔iiss.
Rectified spirit	cong. j.
Water	Oij.

Mix them; then with a slow fire let a gallon distil.

Edin. Ph. 1841.

℞ Lavender, fresh	℔ijss.
Rectified spirit	cong. j.

Mix them, and with the heat of a vapour-bath distil over seven pints.

Dubl. Ph. 1836.

℞ Fresh flowers of lavender	℔ij.
Proof spirit	cong. j.
Water, sufficient to prevent empyreuma.	

Macerate for twenty-four hours, and then with a medium heat distil five pints.

Its uses are merely pharmaceutical.

SPIRITUS LAVANDULÆ COMPOSITUS. *Compound spirit of lavender.*

Edin. Ph. 1841.

℞ Spirit of lavender	Oij.
Spirit of rosemary	f℥xij.
Cinnamon, in coarse powder	℥j.
Cloves, bruised	ʒij.
Nutmeg, bruised	℥ss.
Red sandal-wood, in shavings	ʒiij.

Let the whole macerate for seven days, and then strain the liquor through calico.

Dubl. Ph. 1826.

℞ Spirit of lavender	Oiij.
Spirit of rosemary	Oj.
Nutmegs, bruised,	
Cinnamon bulb, bruised, āā	℥ss.
Cloves	ʒij.
Red saunders-wood raspings	℥j.

Digest for ten days and then filter.

Med. use. Stimulant and stomachic in languor and flatulency. *Dose*, ʒss to ʒi.

SPIRITUS MENTHÆ PIPERITÆ. *Spirit of peppermint.*

Lond. Ph. 1836.

℞ Oil of peppermint	ʒiij.
Proof spirit	conj. j.
Water	Oj.

Mix them; then with a slow fire let a gallon distil.

Edin. Ph. 1841.

℞ Peppermint, fresh	lbiss.

Proceed as for the spirit of caraway.

Dubl. Ph. 1826.

℞ Oil of peppermint, *by weight*	℥ss.
Rectified spirit	cong. j.

Add the spirit to the oil, and pour on them as much water as after the distillation may be sufficient to prevent empyreuma: then with a slow fire distil a gallon.

Med. use. Stimulant and carminative. *Dose*, ʒi. to ʒij.

SPIRITUS MENTHÆ VIRIDIS. *Spirit of spearmint.*

Lond. Ph. 1836.

℞	Oil of spearmint	ʒiij.
	Proof spirit	cong. j.
	Water	Oj.

Mix them; then with a slow fire let a gallon distil.

Dubl. Ph. 1826.

℞	Oil of spearmint, *by weight*	℥ss.
	Rectified spirit	cong. j.

Add the spirit to the oil, and pour on them as much water as will be sufficient, after the distillation, to prevent empyreuma; then with a slow fire distil a gallon.

Med. use. The same as the preceding.

SPIRITUS MENTHÆ PULEGII. *Spirit of pennyroyal.*

Lond. Ph. 1836.

℞	Oil of pennyroyal	ʒiij.
	Proof spirit	cong. j.
	Water	Oj.

Mix them; then with a slow fire let a gallon distil.

Med. uses and *Dose.* Same as the spirit of peppermint.

SPIRITUS MYRISTICÆ. *Spirit of nutmeg.*

Lond. Ph. 1836.

℞	Nutmegs, bruised	℥ijss.
	Proof spirit	cong. j.
	Water	Oj.

Mix them; then with a slow fire let a gallon distil.

Edin. Ph. 1841.

The same as the London.

Dubl. Ph. 1826. *Spiritus nucis moschatæ.*

℞	Nutmegs, bruised	℥ij.
	Proof spirit	cong. j.
	Water, sufficient to prevent empyreuma.	

Macerate for 24 hours, and distil a gallon.

Med. use. Cordial and carminative. *Dose,* fʒi to fʒiv.

SPIRITUS PIMENTÆ. *Spirit of pimento.*

Lond. Ph. 1836.

℞	Pimento	℥iiss.
	Proof spirit	cong. j.
	Water	Oj.

Mix them; then with a slow fire let a gallon distil.

Edin. Ph. 1841.

℞	Pimento, bruised	lbss.

Proceed as for the spirit of caraway.

Dubl. Ph. 1826

℞	Pimento berries, bruised	℥iij.
	Proof spirit	cong. j.
	Water sufficient to prevent empyreuma.	

Macerate for 24 hours, and distil a gallon.

Med. use. The same as the peppermint.

SPIRITUS RECTIFICATUS. *Rectified spirit.*

Lond. Ph. 1836.

The specific gravity of this is 0·838. It is free from colour, and is not rendered turbid on the addition of water. In taste and smell it resembles wine. This spirit may be reduced to proof spirit by adding to five pints of it three pints of distilled water at a temperature of 62°.

Edin. Ph. 1841.

Density ·838 (56 over proof): f℥iv treated with 25 minims of solution of nitrate of silver, exposed to bright light for 24 hours, and then passed through a filter purified by weak nitric acid, so as to separate the black powder which forms, undergo no further change when again exposed to light with more of the test.

SPIRITUS ROSMARINI. *Spirit of rosemary.*

Lond. Ph. 1836.

℞	Oil of rosemary	ʒij.
	Rectified spirit	cong. j.
	Water	Oj.

Mix them; then with a slow fire let a gallon distil.

Edin. Ph. 1841.

℞	Rosemary	lbiiss.

Proceed as for the spirit of lavender.

Dubl. Ph. 1826.

℞	Fresh tops of rosemary	lbiss.
	Proof spirit	conj. j.

Distil with a medium heat, five pounds.

SPIRITUS SULPHURICO-ÆTHEREUS MARTIATUS. *Sulphurico-æthereal spirit of iron.*

Phar. Boruss. 1813.

℞ Pure iron filings, any quantity.

Dissolve in a sufficient quantity of muriatic acid mixed with a third part of nitric acid. Evaporate the solution by the heat of a sand-bath. Set aside the mass when dried in a cellar that it may deliquesce. Mix the brown-coloured liquor with twice its weight of sulphuric æther, shaking them carefully. Separate the ether impregnated in this way with the muriate of iron and mix it with twice its weight of rectified spirit of wine. Expose the mixture in oblong well-stoppered glass vessels to the rays of the sun, until all its colour shall have disappeared. Then preserve carefully.

SPIRITUS TENUIOR. *Proof spirit.*

Edin. Ph. 1841.

℞	Rectified spirit	Oij.
	Distilled water	Oj.

Mix them. The density of the product should be 912.

Note. Density ·912 (7 over proof): tests, otherwise, as for rectified spirit.

Lond. Ph. 1836.

The specific gravity of this is 0·920 according to the laws of the kingdom. Its other properties are similar to those of *spiritus rectificatus.*

SPODIUM (from σποδος, a cinder.)

The white ash resulting from calcination.

SPODIUM PRÆPARATUM. *Spodium album.*

Ivory burnt until reduced to a white ash.

Spongia cerata. *Cerated sponge.*

Sponge, prepared by washing and drying, is dipped into melted wax, and then pressed between metallic plates slightly heated. It is used for *Tents.*

Spongia usta. *Burnt sponge.*

Cut sponge, which has not been previously washed, into small pieces, beat them to separate the sand, dust, and impurities; then put them into an iron vessel similar to a coffee-roaster, with only a small aperture for the escape of gases, and heat it over a gentle fire until the sponge is reduced to a brown friable mass. Reduce this to powder.

Stones, five precious. Garnet, hyacinth, sapphire, cornelian, emerald.

These were formerly accounted cordial!

Stannum. *Tin.* *Symb.* Sn. *Equiv.* 58.

A white, malleable, and slightly ductile metal.

Sp. gr. 7·3. It melts at 442° Fahr.

Lond. Ph. 1836.

Boiled with hydrochloric acid it is almost entirely dissolved. The solution is free from colour, but becomes purple on the addition of chloride of gold. What is precipitated by potash is white, and when added in excess it is redissolved. The sp. gr. is 7·29.

Edin. Ph. 1841.

When finely granulated, 100 grains are entirely converted into a white powder by f℥iij of nitric acid (D. 1·380); and distilled water, boiled with this powder and filtered, is colourless, and precipitates but faintly, or not at all, with solution of sulphate of magnesia.

Stanni chloridum. *Chloride of tin.* *Protochloride of tin.*

Add hydrochloric acid to powdered tin and boil the mixture, keeping excess of tin always present; afterwards dilute it with water, and keep it in a bottle with some powdered tin at the bottom.

Stanni bichloridum. *Bichloride of tin.*

1.

Libavius's fuming liquor.

℞ Powdered tin . . 1 part.
Corrosive sublimate . 3 parts.

Mix, and heat, the mixture in a glass retort, until a fuming, colourless liquid passes into the receiver.

2.

Dyers' spirit.

This is made by dissolving powdered tin in hydrochloric acid, with the addition of a portion of nitric acid. Several kinds of dyers' spirit are made, which differ according to the proportion of nitric acid and the degree of heat employed.

Stanni pulvis. *Powder of tin.*

Edin. Ph. 1841.

Melt tin in an iron vessel; pour it into an earthenware mortar heated a little above the melting point of the metal; triturate briskly as the metal cools, ceasing as soon as a considerable proportion is pulverized; sift the product, and repeat the process with what remains in the sieve.

Dubl. Ph. 1826.

Take of the purest tin, any required quantity, liquefied by heat, let it be strongly agitated until it passes into a powder, which when cold is to be shaken through a sieve.

STANNI OXIDUM. *Oxide of tin.*

Soubeiran's Ph. 1840.

The tin is put into an iron ladle, or, in case of acting on large masses, into a cast metal pot; it is fused and left on the fire; it soon absorbs the oxygen of the air, and becomes covered with a grey scoria, which is protoxide. As the oxide is formed, it is drawn aside by means of an iron spatula, and the process is continued until all the tin becomes converted into oxide; this is left on the fire for some time longer, to complete the oxidation of those portions of the metal which may have remained mixed up with it.

STRYCHNIA. *Strychnia.*

Lond. Ph. 1836.

℞	Nux vomica, bruised .	℔ij.
	Rectified spirit . .	cong. ii.
	Diluted sulphuric acid,	
	Magnesia, āā . .	q. s.

Boil the nux vomica, when bruised, with a gallon of spirit, for an hour in a retort, to which a receiver has been fitted. Pour off the liquor, and that which remains again and a third time boil with another gallon of spirit and the spirit recently distilled. Press the nux vomica, and let the spirit distil from the mixed and strained liquors. That which remains evaporate to the proper consistence of an extract. Dissolve this in cold water, and strain. Evaporate the liquor by a gentle heat, so that it may have the consistence of a syrup. To this, while still warm, gradually add the magnesia even to saturation, shaking them at the same time. Set aside for two days, then pour off the supernatant liquor. Press that which remains wrapped in a linen cloth. Boil this in spirit, then strain, and let the spirit distil. To the residue add some dilute sulphuric acid mixed with water, and macerate with a gentle heat. Set aside for twenty-four hours that crystals may form. Press and dissolve these. Then to these dissolved in water add ammonia, occasionally shaking, that the strychnia may be thrown down. Lastly, dissolve this in boiling spirit, and set aside, that pure crystals may be obtained.

Note. This readily dissolves in boiling alcohol, but not so in water. It melts by heat, and if it be more strongly urged, it is entirely dissipated. This being endowed with great powers, must be employed with caution.

Edin. Ph. 1841.

℞	Nux vomica . .	℔j.
	Quick lime . . .	℥iss.
	Rectified spirit . . .	q. s.

Subject the nux vomica for two hours to the vapour of steam, chop or slice it, dry it thoroughly in the vapour-bath, or hot air-press, and immediately grind it in a coffee-mill. Macerate it for twelve hours in two pints of water and boil it; strain through linen or calico, and squeeze the residuum; repeat the maceration and decoction twice with a pint and a half of water. Concentrate the decoctions to the consistence of thin syrup; add the lime in the form of milk of lime; dry the precipitate in the vapour-bath; pulverize it, and boil it with successive portions of rectified spirit till the spirit cease to acquire a bitter taste. Distil off the spirit till the residuum be sufficiently concentrated to crystallize on cooling. Purify the crystals by repeated crystallizations.

Note. Intensely bitter; nitric acid strongly reddens it; a solution of 10 grains in 4 fluidounces of water by means of a fluidrachm of pyroligneous acid, when decomposed by one fluidounce of concentrated solution of carbonate of soda yields on brisk agitation a coherent mass weighing when dry ten grains, and entirely soluble in solution of oxalic acid.

STORM GLASS.

This name is applied to a glass tube about twelve inches long and three-fourths of an inch in diameter, nearly filled with one of the following solutions:—

1.

℞	Camphor	ʒij.
	Nitrate of potash	ʒiss.
	Salammoniac	ʒij.
	Proof spirit	℥ij.

Mix.

2.

℞	Camphor	ʒiiss.
	Nitrate of potash	gr. xxxviij.
	Salammoniac	gr. xxxviij.
	Rectified spirit	ʒxj.
	Water	ʒxj.

Mix.

The following indications *are said* to be afforded by the storm glass:—

1. If the solution be very clear, with only a small quantity of crystalline matter at the bottom of the glass, fine dry weather may be expected.

2. The formation of fresh crystals, extending upwards through the glass while the liquid still continues clear, indicates a change of weather with rain.

3. The formation of plumose crystals, some of which float in the upper part of the liquid, while the liquid itself assumes a turbid appearance, indicates the approach of a storm with high wind.

SUCCI EXPRESSI. *Expressed juices. Preserved juices.*

Under this name a class of preparations have been introduced in this country by Mr. Squire. They are made by expressing the juices from plants, at the period of their growth when they possess the greatest amount of medicinal activity, mixing these juices with half their volume of rectified spirit, allowing the mixture to stand for a short time, and then filtering. In this manner the following are made:—

SUCCUS ABSINTHII. *Preserved juice of wormwood.*

From the fresh herb during the period of inflorescence.

SUCCUS ACONITI. *Preserved juice of aconite.*

From the leaves of the fresh herb during the period of inflorescence.

SUCCUS CONII. *Preserved juice of hemlock.*

From the leaves of the fresh herb during the period of inflorescence.

SUCCUS DIGITALIS. *Preserved juice of foxglove.*

From the leaves of the fresh herb during the period of inflorescence.

SUCCUS HYOSCYAMI. *Preserved juice of henbane.*

From the leaves of the fresh herb during the period of inflorescence.

SUCCUS LACTUCÆ. *Preserved juice of lettuce.*

From the leaves of the fresh herb during the period of inflorescence.

SUCCUS TARAXACI. *Preserved juice of dandelion.*

From the roots dug up in the months of September, October, or November. Other *Preserved juices* may be made in a similar manner.

SUCCUS JUNIPERI INSPISSATUS. *Inspissated juice of juniper.*

Ph. Boruss. 1813.

Let ripe juniper berries, still fresh, be boiled in common water, until they become soft; then let them be expressed gently. Let the expressed juice be inspissated by a moderate heat to the consistence of honey.

SUCCUS DAUCI INSPISSATUS. *Inspissated juice of carrot.*

Ph. Boruss. 1813.

Boil in a tin vessel till they begin to soften, the fresh roots of the carrot (Daucus sativus), after being well cleansed and sliced, having first covered them about one half with water. Express the juice, which is to be cleared by giving it one boil, and evaporate it by a gentle heat to the consistence of honey.

SULPHUR. *Brimstone.* *Symb.* S. *equiv.* 16.

Sulphur is met with in an uncombined state in the earth, in great abundance in some districts, as in Sicily, from whence most of that used in this country is brought. It also occurs, more generally distributed, in combination with other elements.

Native sulphur, is deprived of some of its impurities, either by melting and straining it, or by subliming it in small pots. The product is called *Crude sulphur.*

Sublimed sulphur, or *Flowers of sulphur*, is the product of the sublimation of crude sulphur, on the large scale, the vapour being conducted into a capacious chamber, in which it condenses in small crystalline particles.

Edin. Ph. 1841. *Sulphur sublimatum.*

Sublime sulphur in a proper vessel; wash the powder thus obtained with boiling water in succesive portions till the water ceases to have an acid taste; then dry the sulphur with a gentle heat.

Note.—It is entirely sublimed by heat; and distilled water agitated with it does not affect litmus-paper. When nitric acid is heated with it, the solution, diluted with water, neutralized with carbonate of soda, and acidulated with muriatic acid, does not give a yellow precipitate with sulphuretted hydrogen.

Lond. Ph. 1836. *Sulphur.*

At a temperature of 600° it totally evaporates. When washed with water it does not alter the colour of litmus.

Dubl. Ph. 1826. *Sulphur lotum.*

Pour hot water on to sublimed sulphur, and repeat the washing as long as effused water appears contaminated with acid. This is discovered by means of litmus. Dry the sulphur on bibulous paper.

Roll sulphur. Stick sulphur. Sulphur rotundum.
Sulphur purified by distillation, and cast in moulds while in the fluid state.

Sulphur vivum. Sulphur nigrum. Black sulphur.
The residue left in the subliming pot after purifying sulphur by sublimation. It frequently contains arsenic.

Sulphur precipitatum. Precipitated sulphur.

U. S. Ph. 1840.

℞	Sulphur (sublimed)	lbj.
	Lime	lbiss.
	Water	2 gallons.
	Muriatic acid, a sufficient quantity.	

Slake the lime with a small quantity of the water, and having mixed it with the sulphur add the remainder of the water; boil for two or three hours, occasionally adding water so as to preserve the measure, and filter. Dilute the filtered liquor with an equal bulk of water; then drop into it sufficient muriatic acid to precipitate the sulphur. Lastly, wash the precipitate repeatedly with water till the washings are tasteless, and dry it.

SULPHURIS HYPOCHLORIDUM. *Sulphuris hypochloritis. Sulphuris chloridum. Chloride, Hypochloride,* or *Hypochlorite of sulphur.*
Under these names a compound is used in medicine, which is prepared by placing sublimed sulphur on a shallow dish, in a suitable apparatus, and passing chlorine gas slowly over it, until the gas ceases to be absorbed. The product is probably *Chloride of sulphur* (which is an orange yellow liquid) mixed with sulphur.

Med. use. Internally, in gouty affections and nervous fever. Externally, in *psoriasis inveterata.*

SULPHURIS IODIDUM. *Iodide of sulphur.*

U. S. Ph. 1840.

℞	Iodine	℥iv.
	Sulphur	℥j.

Rub the iodine and sulphur together in a glass, porcelain, or marble mortar, until they are thoroughly mixed. Put the mixture into a matrass, close the orifice loosely, and apply a gentle heat so as to darken it without melting it. When the colour has become uniformly dark throughout, increase the heat so as to melt the iodide; then incline the matrass in different directions in order to return into the mass any portions of iodine which may have been condensed on the inner surface of the vessel; lastly, allow the matrass to cool, break it, and put the iodide into bottles which are well stoppered.

SUPPOSITORIUM.
A medicine to be administered by the rectum,—usually of

the consistence of a pill-mass or ointment, and made into a conical or cylindrical form.

SYRUPI. *Syrups.*

Dubl. Ph. 1826.

When no mention is made either of weight, or the mode of dissolving, syrups are to be prepared according to the following rule :—

℞	Refined sugar, finely powdered	℥xxix.
	The liquor prescribed	f℥xvj.

Add the sugar by degrees, and digest it with a medium heat in a covered vessel, frequently shaking it until it is dissolved; then set it aside for twenty-four hours, remove the scum, and pour off the syrup from the fæces, if there be any.

SYRUPUS. *Syrup.* Lond. *Syrupus simplex.* Edin.

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Sugar	℔x.
	Water	Oiij.

Dissolve the sugar in the water with a gentle heat.

SYRUPUS ACETI. *Syrup of vinegar.*

Edin. Ph. 1841.

℞	Vinegar, French in preference	f℥xj.
	Pure sugar	℥xiv.

Boil them together.

Use. This is good for sweetening barley-water or gruels, in inflammatory diseases.

SYRUPUS ADIANTHI. *Syrup of maiden-hair. Capillaire.*

Codex.

℞	Canadian maiden-hair (adianthum pedatum)	192 parts.
	Boiling water	1500 „
	White sugar	2000 „

Infuse two-thirds of the maiden-hair in the water, strain, dissolve the sugar in the infusion, clarify it with white of egg, pour it over the remainder of the maiden-hair placed in a water-bath, digest them for two hours, and then strain the syrup.

Clarified syrup flavoured with orange-flower water is frequently sold for *Capillaire.*

SYRUPUS ALLII. *Syrup of garlic.*

℞	Fresh garlic, sliced	℥vj.
	Distilled vinegar	Oj
	Sugar (refined)	℔ij.

Macerate the garlic in the vinegar in a glass vessel for four days, then express the liquor, and set it aside that the dregs may subside; lastly, add the sugar, and strain the syrup while hot.

SYRUPUS ALTHÆÆ. *Syrup of marshmallow.*

Lond. Ph. 1836.

℞	Marshmallow root, bruised	℥viij.
	Sugar . . .	℔iiss.
	Water . . .	Oiv.

Boil down the water with the root to half, and press out the cooled liquor. Set it by for twenty-four hours, that the dregs may subside; then pour off the liquor, and, the sugar being added, boil down to a proper consistence.

Edin. Ph. 1841.

℞	Althæa root, fresh and sliced	℥viij.
	Boiling water . .	Oiv.
	Pure sugar . .	℔iiss.

Boil the althæa root with the water down to two pints; strain, and express strongly through calico; let the impurities subside; and dissolve the sugar in the clear liquor with the aid of heat.

Dubl. Ph. 1826.

℞	Fresh root of the marshmallow, bruised	℔ss.
	Refined sugar	℔ij.
	Water	Oiv.

Boil the water with the root down to one-half, and express the liquor when cold; lay it aside for twenty-four hours, that the fæces may subside; then pour off the liquor, and having added the sugar, boil down to a proper consistence.

Med. use. Demulcent. *Dose*, ʒj to ʒiv.

SYRUPUS AMYGDALÆ. *Sirop d'orgeat. Orgeat.*

Codex.

℞	Sweet almonds . . .	500 parts.
	Bitter almonds . . .	160 „
	White sugar . . .	3,000 „
	Water	1,625 „
	Orange-flower water . .	250 „

Blanch the almonds, beat them into a paste with some of the water and sugar; mix this paste with the rest of the water, strain and press; dissolve the remainder of the sugar in the emulsion with the heat of a water-bath; then add the orange-flower water, and strain the syrup.

SYRUPUS AURANTII. *Syrup of orange peel.*

Lond. Ph. 1836.

℞	Orange-peel, fresh .	℥iiss.
	Water, boiling . .	Oj.
	Sugar . . .	lbiij.

Macerate the peel in the water for twelve hours, in a vessel lightly covered, then pour off the liquor, and add the sugar to it.

Edin. Ph. 1841.

℞	Fresh bitter orange-peel .	iiss.
	Boiling water . .	Oj.
	Pure sugar . ,	lbiij.

Infuse the peel in the water for twelve hours in a covered vessel, pour off the liquor, and filter it, if necessary; add the sugar to the liquor, and dissolve it with the aid of heat.

Dubl. Ph. 1826.

℞	Fresh outer rind of Seville orange .	℥viij.
	Boiling water	Ovj.

Macerate for twelve hours in a covered vessel; then having filtered the liquor, dissolve the sugar in it to form a syrup.

Med. use. As an adjunct to stomachic mixtures. *Dose*, ʒj to ʒiij.

SYRUPUS CROCI. *Syrup of saffron.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Saffron	ʒx.
	Water, boiling	Oj.
	Sugar	lbiij.

Macerate the saffron in the water for twelve hours in a vessel lightly covered, then strain the liquor, and add the sugar to it.

SYRUPUS FERRI CITRATIS. *Syrup of citrate of iron.*

Beral.

℞	Citrate of peroxide of iron	℥j.
	Syrup	℥xv.
	Spirit of lemon	ʒij. Mix.

SYRUPUS FERRI IODIDI. *Syrup of iodide of iron.*

Mr. Hemingway.

The solution.

℞	Iodine	℥iij. ʒvij. ℈ij.
	Iron filings, clean	℥ij.

Distilled water, q.s. to make f℥xiiss.

Put the iron filings and half the water into a wedgewood mortar or a flask, and add the iodine in small quantities at a time, agitating the mixture until it has become colourless; then filter the solution and wash the iron with the remainder of the water. Keep it in a stoppered bottle with a coil of iron wire.

The syrup.

℞	Simple syrup	f℥xv.
	The solution of iodide of iron	f℥ij.

Gently evaporate the syrup over the fire until it has decreased in weight two ounces *avoirdupoise*, then introduce it into a bottle, add the solution of iodide of iron, and shake them together. Repeat the agitation after the syrup has cooled, and keep it in small stoppered bottles.

Each fʒj of this syrup will contain grs. iij of the dry, or grs. iv of the hydrated iodide of iron.

SYRUPUS IPECACUANHÆ. *Syrup of ipecacuanha.*

Edin. Ph. 1841.

℞	Ipecacuan, in coarse powder	℥iv.
	Rectified spirit	Oj.
	Proof spirit,	
	Water, āā	f℥xiv.
	Syrup	Ovij.

Digest the ipecacuan in fifteen fluidounces of the rectified spirit at a gentle heat for twenty-four hours; strain; squeeze the residuum, and filter. Repeat this process with the residuum and proof spirit, and again with the water. Unite the fluids, and distil off the spirit, until the residuum amount to twelve ounces; add to the residuum five fluidounces of the rectified spirit, and then the syrup.

Med. use. As an adjunct to cough mixtures—may be given to infants and young children.

SYRUPUS LIMONUM. *Syrup of lemons.*

Lond. Ph. 1836.

℞ Juice of lemons, strained	Oj.
Sugar . . .	lbiiss.

Dissolve the sugar in the juice of lemons with a gentle heat, then set it aside for twenty-four hours; afterwards remove the scum, and if there be any dregs, pour the clear liquor from them.

Edin. Ph. 1841.

℞ Lemon-juice freed of impurities by subsidence and filtration . .	Oj.
Sugar . . .	lbiiss.

Dissolve the sugar in the lemon-juice with the aid of a gentle heat, and after twenty-four hours' rest remove the scum, and pour the clear liquor from the dregs.

Dubl. Ph. 1826.

℞ Juice of fresh lemons . . .	Oij.

As soon as the fæces have subsided put the juice into a matrass, and subject it for a quarter of an hour to the heat of boiling water; when cold pass it through a sieve, and form a syrup.

SYRUPUS MORI. *Syrup of mulberry.*

Lond. Ph. 1836.

℞ Juice of mulberries, strained - .	Oj.
Sugar	lbiiss.

Dissolve the sugar in the juice of mulberries with a gentle heat, and proceed in the same manner as directed for syrup of lemons.

SYRUPUS PAPAVERIS. *Syrup of poppy.*

Lond. Ph. 1836.

℞ Poppy capsules .	lbiij.
Sugar . . .	lbv.
Water, boiling . .	cong. v.

Boil down the capsules in the water to two gallons, and press strongly. Again boil down the strained liquor to four pints, and strain while hot. Set it by for twelve hours, that the dregs may subside: then boil down the clear liquor to two pints; add the sugar and dissolve it.

Edin. Ph, 1841.

℞ Poppy-heads, without the seeds . .	lbiss.
Boiling water . .	Oxv.
Pure sugar . .	lbiij.

Slice the poppy-heads, infuse them in the water for twelve hours, boil down to five pints, strain, and express strongly through calico; boil again down to two pints and a half; then add the sugar, and dissolve it with the aid of heat.

Dubl. Ph. 1826. *Syrupus papaveris somniferi.*

℞ Capsules of the white poppy, dried and bruised, after taking out the seeds .	℥xvij.
Boiling water	cong. ij.

Macerate the capsules in the water for twenty-four hours, then boil down to one gallon in a water-bath, and strongly express the liquor. After straining this liquor boil it down again to two pints, and filter it while it is yet hot. Set it aside for twelve hours that the fæces may subside; then boil down the defæcated liquor to a pint, and form a syrup.

Med. use. Narcotic, sedative, and anodyne. *Dose*, from ʒss. to ʒij, according to the age of the patient.

SYRUPUS RHAMNI. *Syrup of buckthorn.*

Lond. Ph. 1836.

℞	Juice of buckthorn, fresh	Oiv.
	Ginger, sliced,	
	Pimento, powdered, āā	ʒvj.
	Sugar	lbiv.

Set by the juice for three days, that the dregs may subside, and strain. To a pint of the clear juice add the ginger and pimento; then macerate with a gentle heat for four hours, and strain; boil down that which is left to the measure of a pint and a half; mix the liquors; add the sugar, and dissolve it.

Edin. Ph. 1841.

The same as the London, except that the Edin. Ph. directs the sugar to be dissolved "with the aid of heat."

Dubl. Ph. 1826.

℞	Fresh juice of buckthorn berries	Oiiss.
	Ginger root, sliced,	
	Pimento berries, bruised, āā	ʒiij.

Set the juice aside that the fæces may subside, and then filter it; add the ginger and pimento berries to ten ounces of the defæcated juice; macerate for twenty-four hours, and filter; boil down the remaining liquor to a pint, mix the liquors, and form a syrup.

Med. use. A drastic cathartic; is but seldom used excepting in veterinary medicine. *Dose,* ʒj to ʒiv.

SYRUPUS RHÆADOS. *Syrup of red poppy.*

Lond. Ph. 1836.

℞	Red poppy petals	lbj.
	Water, boiling	Oj.
	Sugar	lbiiss.

Add the petals of the red poppy gradually to the water, heated in a water-bath, frequently stirring them; then, the vessel being removed, macerate for twelve hours; afterwards press out the liquor, and when the dregs have subsided, add the sugar, and dissolve it.

Edin. Ph. 1841.

℞	Corn-poppy petals	lbj.
	Boiling water	Oj.
	Pure sugar	lbiiss.

Heat the water over a vapour-bath, add the petals by degrees, stirring occasionally; remove the vessel from the bath, infuse for twelve hours; strain, and express the liquor; add to it the sugar, and dissolve this with the aid of heat.

Dubl. Ph. 1826. *Syrupus papaveris rhœados.*

℞	Fresh petals of the red poppy	lbj.
	Boiling water, *by measure*	℥xx.

Add the petals gradually to the boiling water; then having removed the vessel from the fire, macerate with a low heat for twelve hours; then express the liquor, and set it aside that the fæces may subside; lastly, add the sugar, and form a syrup.

Used for its fine red colour.

SYRUPUS RHEI. *Syrup of rhubarb.*

U. S. Ph. 1840. *Syrupus rhei.*

℞	Rhubarb, sliced	℥ij.
	Boiling water	f℥xvj.
	Sugar	lbij.

Macerate the rhubarb in the water for 24 hours, then strain, and add the sugar.

Edin. Ph. 1744. *Syrupus rhei et sennæ.*

℞	Rhubarb	℥j.
	Senna	℥ij.
	Fennel seeds	ʒij.
	Cinnamon	ʒij.
	Boiling water	Oiiss.
	Sugar	lbiij.

Macerate all except the sugar for 12 hours, then strain, add the sugar and boil.

SYRUPUS RHEI AROMATICUS. *Aromatic syrup of rhubarb.*

U. S. Ph. 1840.

℞	Rhubarb, bruised	℥iiss.
	Cloves, bruised,	
	Cinnamon, bruised, āā	℥ss.
	Nutmegs, bruised	ʒij.
	Diluted alcohol	Oij.
	Syrup	Ovj.

Macerate the rhubarb and aromatics in the diluted alcohol for fourteen days, and strain; then by means of a water-bath evaporate the liquor to a pint, and while it is yet hot mix it with the syrup previously heated.

SYRUPUS ROSÆ. *Syrup of rose.*

Lond. Ph. 1836.

℞	Damask rose (petals), dried	℥vij.
	Sugar	lbvj.
	Water, boiling	Oiij.

Macerate the rose petals in the water for twelve hours, and strain. Evaporate the strained liquor in a water-bath to two pints; then add the sugar, and dissolve it.

Edin. Ph. 1841. *Syrupus rosæ centifoliæ.*

℞	Fresh damask-rose petals	lbj.
	Boiling water	Oiij.
	Pure sugar	lbiij.

Infuse the petals in the water for twelve hours, strain the liquor, and dissolve the sugar in it with the aid of heat.

Dubl. Ph. 1826. *Syrupus rosæ.*

℞	Dried petals of the hundred-leaved rose	℥vij.
	Boiling water	Oiv.

Macerate the petals in the water for twelve hours, and filter; evaporate the filtered liquor in a water-bath down to two pints and a half, then add the sugar, and form a syrup.

Med. use. Laxative; may be given to infants. *Dose,* ʒij to ʒiv.

Edin. Ph. 1841. *Syrupus rosæ gallicæ.*

℞	Dried red rose petals	℥ij.
	Boiling water	Oj.
	Pure sugar	℥xx.

Proceed as for the syrup of damask rose.

Med. use. Astringent; is sometimes added to astringent gargles.

SYRUPUS SARZÆ. *Syrup of sarsaparilla.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Sarsaparilla, sliced	℥xv.
	Water boiling	cong. j.
	Sugar	℥xv.

Macerate the sarsaparilla in the water for twenty-four hours; then boil down to four pints, and strain the liquor while hot; afterwards add the sugar, and evaporate to a proper consistence.

Dubl. Ph. 1826.

℞	Sarsaparilla root, sliced	lbj.
	Boiling water	cong. j.

Macerate the root in the water for twenty-four hours; then boil down to four pints, and filter the liquor while it is yet hot; then form a syrup in the manner before directed.

Soubeiran's Ph. 1840. *Sirop de salsepareille.*

℞	Alcoholic extract of sarsaparilla	370 parts.
	Water	3836 parts.
	Sugar	7672 parts.

Dissolve the extract in water by the heat of the sand-bath; filter the boiling liquor; the sugar is then added, and a syrup is made by solution.

This syrup has been adopted by the Codex. It was originally proposed by M. Beral to replace that made with water, which is less constant in its composition. The syrup contains 15½ grains of extract in each ounce.

SYRUPUS SCILLÆ. *Syrup of squill.*

Edin. Ph. 1841.

℞	Vinegar of squill	Oiij.
	Pure sugar in powder	lbvij.

Dissolve the sugar in the vinegar of squills with the aid of a gentle heat, and agitation.

SYRUPUS SENNÆ. *Syrup of senna.*

Lond. Ph. 1836.

℞	Senna	℥iiss.
	Fennel, bruised	ʒx.
	Manna	℥iij.
	Sugar	℥xv.
	Water, boiling	Oj.

Macerate the senna and fennel in the water with a gentle heat for an hour. Mix the manna and sugar with the strained liquor; then boil down to a proper consistence.

Edin. Ph. 1841.

℞	Senna	℥iv.
	Boiling water	Oj. and f℥iv.
	Treacle	℥xlviii.

Infuse the senna in the water for twelve hours; strain and express strongly through calico, so as to obtain a pint and two fluidounces at least of liquid. Concentrate the treacle in the vapour-bath as far as possible, or till a little taken out upon a rod becomes nearly concrete on cooling; and while the treacle is still hot, add the infusion, stirring carefully, and removing the vessel from the vapour-bath as soon as the mixture is complete.

If Alexandrian senna be used for this preparation, it must be carefully freed of cynanchum leaves by picking it.

SYRUPUS TOLUTANUS. *Syrup of Tolu.*

Lond. Ph. 1836.

℞	
Balsam of Tolu	ʒx.
Water, boiling	Oj.
Sugar	lbiiss.

Boil the balsam in the water for half an hour in a vessel lightly covered, frequently stirring, and strain the cooled liquor; then add the sugar, and dissolve it.

Edin. Ph. 1841.

℞	
Simple syrup	lbij.
Tincture of Tolu	℥j.

When the syrup has been recently prepared and has not altogether cooled, add the tincture of Tolu by degrees, agitating briskly.

Dubl. Ph. 1826. *Syrupus balsami Tolutani.*

℞	
Simple syrup	lbiss.
Tincture of balsam of Tolu	℥j.

With the syrup just prepared, when it has almost grown cold, after being removed from the fire, mix the tincture by degrees, with constant agitation.

Used to impart an agreeable flavour to cough mixtures, draughts, &c. *Dose*, fʒj to fʒiv.

SYRUPUS VIOLÆ. *Syrup of violet.*

Edin. Ph. 1841.

℞	
Fresh violets	lbj.
Boiling water	Oiiss.
Pure sugar	lbviiss.

Infuse the flowers for twenty-four hours in the water, in a covered glass or earthenware vessel; strain without squeezing, and dissolve the sugar in the filtered liquor.

Dubl. Ph. 1826.

℞	
Fresh petals of the violet	lbij.
Boiling water	Ov.

Macerate for twenty-four hours; then filter the liquor through fine linen, without expression; lastly, add the sugar and form a syrup.

Use. Gently laxative to children.

SYRUPUS ZINGIBERIS. *Syrup of ginger.*

Lond. Ph. 1836.

℞	
Ginger, sliced	℥iiss.
Water, boiling	Oj.
Sugar	lbiiss.

Macerate the ginger in the water for four hours, and strain; then add the sugar and dissolve it.

Edin. Ph. 1841.

The same as the London, except that the Ed. Ph. orders the sugar to be dissolved "with the aid of heat."

Dubl. Ph. 1826.

℞	
Ginger root, bruised	℥iv.
Boiling water	Oiij.

Macerate for twenty-four hours; then, having filtered the liquor, add the sugar, and form a syrup.

Med. use. Stomachic and carminative. fʒj to fʒiv.

TALC. *Foliated talc. Ubruc.*

A transparent crystalline mineral, consisting of easily separated folia, of a white, or greenish or yellowish white colour. It consists essentially of silica and magnesia.

TARAXACUM COFFEE. *Dandelion coffee.*

A powder is sold under this name which consists of taraxacum roots well cleaned, dried, and powdered, and mixed with coffee.

TELA VESICATORIA. *Taffetas vesicant. Blistering tissue.*

1.

℞	White wax	240 parts.
	Spermaceti	30 „
	Olive oil	120 „
	Common turpentine	30 „
	Cantharides	30 or 60 „
	Water	300 „

Digest in a water-bath for two hours, then strain and separate the plaster from the water. A thin coating of this plaster is to be spread while fluid over oiled silk or waxed paper.

2.

℞	White wax	8 parts.
	Ethereal extract of cantharides	4 „

Mix the extract with the wax, melted, and spread the mixture over oiled-silk or waxed paper, as No. 1, and subsequently brush it over with solution of benzoin and Canada balsam in spirit.

Croton oil, or extract of mezerion, is sometimes substituted for extract of cantharides.

TESTÆ PREPARATÆ. *Prepared shells.*

Lond. Ph. 1836.

Wash the shells, first freed from impurities, with boiling water; then prepare them in the same manner as directed for chalk.

TINCTURA ABSINTHII. *Tincture of wormwood.*

Pharm. Pruss.

℞	Dried wormwood	℥ij.
	Rectified spirit	℥xij.

Macerate for seven days, and strain.

TINCTURA ACONITI. *Tincture of aconite.*

℞	Aconite root, dried and bruised	lbj
	Rectified spirit	Oiss.

Macerate for 14 days, and strain.

This formula is very nearly that given by Dr. Turnbull. (Pereira.)

TINCTURA ALOES. *Tincture of aloes.*

Lond. Ph. 1836.

℞	Aloes, powdered	℥j.
	Extract of liquorice	℥iij.
	Water	Oiss.
	Rectified spirit	Oss.

Macerate for 14 days, and strain.

Edin. Ph. 1841.

℞	Aloes (Socotorine or Indian), in coarse powder	℥j.
	Extract of liquorice	℥iij.
	Rectified spirit	f℥xij.
	Water	Oj & f℥viij.

Mix them and digest for seven days, with occasional agitation; filter the clear liquor, separated from the sediment. This tincture cannot without difficulty and delay be prepared by percolation.

Dubl. Ph. 1826.

℞ Socotorine aloes, powdered	℥ss.
Extract of liquorice dissolved in	℥iss.
Water	℥viij.
Proof spirit, *by measure*	℥viij.

Digest for seven days, and then filter.

Tinctura aloes composita. (Lond.) *Tinctura aloes et myrrhæ.* (Edin.) *Compound tincture of aloes.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Aloes, powdered	℥iv.
Saffron	℥ij.
Tincture of myrrh	Oij.

Macerate for fourteen days, and strain. (Lond.) Digest for seven days, and filter the clear superincumbent liquor. (Edin.)

Dubl. Ph. 1826. *Tinctura aloes composita.*

℞ Tincture of myrrh	Oij.
Socotorine aloes, in powder	℥iij.

Macerate for fourteen days, and then strain.

Tinctura arnicæ. *Tincture of arnica.*

Ph. Pruss.

℞ Flowers of *Arnica montana*	℥iss.
Spirit, sp. gr. ·900	lbj.

Macerate for 14 days, and strain through fine paper.

Tinctura ammoniæ composita. *Compound tincture of ammonia.*

Lond. Ph. 1836.

℞ Mastich	ʒij.
Rectified spirit	f℥ix.
Oil of lavender	♏xiv.
Oil of amber	♏iv.
Stronger solution of ammonia	Oj.

Macerate the mastic in the spirit, that it may be dissolved, and pour off the clear tincture; then add the other ingredients, and shake them all together.

Tinctura assafœtidæ. *Tincture of assafœtida.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Assafœtida	℥v.
Rectified spirit	Oij.

Macerate for fourteen days, and strain. (Lond.) Digest for seven days, and filter the clear liquor. (Edin.)

Dubl. Ph. 1826.

℞ Assafœtida	℥iv.
Rectified spirit	Oij.
Water	Oss.

Add the spirit to the assafœtida, previously triturated with the water, macerate for 14 days, and filter.

Tinctura aurantii. *Tincture of orange peel.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Orange peel, dried	℥iiiss.
Proof spirit	Oij.

Macerate for 14 days, and strain. (Lond.)

Digest for seven days, strain and express strongly, and filter the liquor. (Edin.)

This tincture may be prepared by percolation, by cutting the peel into small fragments, macerating it in a little of the spirit for 12 hours, and beating the mass into a coarse pulp before putting it into the percolater. (Edin.)

Dubl. Ph. 1826.

℞ Orange rind	℥iij.
Proof spirit	Oij.

Digest for three days, and filter.

TINCTURA BALSAMI TOLUTANI. *Tincture of balsam of Tolu.*

Lond. Ph. 1836, and Dubl. Ph. 1826.

℞ Balsam of Tolu	℥ij.
Rectified spirit	Oij.

Macerate until the balsam is dissolved, and strain.

Edin. Ph. 1841. *Tinctura tolutana.*

℞ Tolu balsam, in coarse powder	℥iiss.
Rectified spirit	Oij.

Digest the balsam in the spirit with gentle heat till it is dissolved.

TINCTURA BELLADONNÆ. *Tincture of belladonna.*

U. S. Ph. 1840.

℞ Belladonna leaves	℥iv.
Diluted alcohol	Oij.

Macerate for 14 days, express, and filter through paper.

TINCTURA BENZOINI COMPOSITA. *Compound tincture of benzoin.*

Lond. Ph. 1836.

℞ Benzoin	℥iiiss.
Storax, strained	℥iiss.
Balsam of Tolu	ʒx.
Aloes	ʒv.
Rectified spirit	Oij.

Macerate for 14 days, and strain.

Edin. Ph. 1842.

℞ Benzoin, in coarse powder	℥iv.
Peru-balsam	℥iiss.
East Indian aloes	℥ss.
Rectified spirit	Oij.

Digest for seven days, pour off the clear liquor, and filter it.

Dubl. Ph. 1826.

℞ Benzoin	℥iij.
Purified styrax	℥ij.
Balsam of Tolu	℥j.
Socotorine aloes	℥ss.
Rectified spirit	Oij.

Digest for seven days, and filter.

TINCTURA BUCKU. (E.) *Tinctura buchu.* (D). *Tincture of buchu.*

Edin. Ph. 1841.

℞ Bucku	℥v.
Proof spirit	Oij.

Digest for seven days, pour off the clear liquor, and filter it. This tincture may be conveniently and quickly made also by the process of percolation.

Dubl. Ph. 1826.

℞ Leaves of the diosma crenata	℥ij.
Proof spirit	Oj.

Macerate for seven days, and filter.

TINCTURA CALUMBÆ. *Tincture of Calumba.* (L. E). (*Colombæ*, D.)

Lond. Ph. 1836.

℞	Calumba, sliced	℥iij.
	Proof spirit	Oij.

Macerate for 14 days, and strain.

Edin. Ph. 1841.

℞	Calumba, in small fragments (if by percolation, in moderately fine powder)	℥iij.
	Proof spirit	Oij.

Digest for seven days, pour off the clear liquor, express the residuum strongly, and filter the liquor. This tincture is much more conveniently prepared by the process of percolation, allowing the powder to be soaked with a little of the spirit for six hours before putting it into the percolator.

Dubl. Ph. 1826.

℞	Columba	℥iiss.
	Proof spirit	Oij.

Macerate for 14 days, and filter.

TINCTURA CAMPHORÆ. *Tincture of camphor.*.

Lond. Ph. 1836.

		Lond.	Edin.	Dubl.
℞	Camphor	ʒv.	℥iiss.	℥j.
	Rectified spirit	Oij.	Oij.	Oss.

Mix, that the camphor may be dissolved.

TINCTURA CAMPHORÆ COMPOSITA. *Compound tincture of camphor.*

		Lond. 1836.	Edin. 1841.	Dubl. 1836.
℞	Camphor	℈iiss.	℈iiss.	℈ij.
	Hard opium, powdered	gr. lxxij.	℈iv.	ʒj.
	Benzoic acid	gr. lxxij.	℈iv.	ʒj.
	Oil of anise	fʒj.	fʒj.	ʒj.
	Proof spirit	Oij.	Oij.	Oij.
	Macerate for 14 days, and strain.		7 days.	14 days.

TINCTURA CANNABIS INDICÆ.

Bengal Disp.

℞	Resinous Extract of Indian hemp	gr. xxiv.
	Proof spirit	f℥j.

Mix and filter.

TINCTURA CANTHARIDIS. *Tincture of cantharides.*

		Lond. 1836, and Edin. 1841.	Dubl. 1826.
℞	Cantharides, bruised	ʒiv.	ʒij.
	Proof spirit	Oij.	Oiss.
			7 days.

Macerate for 14 days, and strain. (Lond.)

Digest for seven days, strain, and press; or make it by percolation. (Edin.)

TINCTURA CANTHARIDIS ETHEREA. *Ethereal tincture of cantharides.*

Soubeiran's Ph. 1840.

℞	Powdered cantharides . . .	1 part.
	Acetic ether	8 parts.

Macerate during eight days, in a well-stopped bottle; strain with expression, filter. This tincture is an active rubefacient and vesicant.

TINCTURA CAPSICI. *Tincture of capsicum.*

		Lond. 1836, and Edin. 1841.	Dubl. 1826.
℞	Capsicum, bruised . .	ʒx.	℥j.
	Proof spirit . .	Oij.	Oij.
			14 days.

Macerate for 14 days, and strain. (Lond.)

——— 7 days, strain and press; or by percolation. (Edin.)

TINCTURA CAPSICI CONCENTRATA.

Dr. Turnbull.

℞	Capsicums	℥iv.
	Rectified spirit	℥xij.

Macerate for seven days, and strain.

TINCTURA CAPSICI CONCENTRATA CUM VERATRIA.

Dr. Turnbull.

℞	Veratria	grs. iv.
	Concentrated tincture of capsicum .	℥j. Mix.

TINCTURA CARDAMOMI. *Tincture of cardamom.*

Lond. Ph. 1836.

℞	Cardamoms, bruised .	℥iiiss.
	Proof spirit . .	Oij.

Macerate for 14 days, and strain.

Edin. Ph. 1841.

℞	Seeds of cardamoms, bruised	℥ivss.
	Proof spirit . .	Oij.

Digest for seven days, strain, squeeze the residuum, and filter the liquors. This tincture may be better prepared by the process of percolation, in the same way with the tincture of capsicum, the seeds being first ground in a coffee-mill.

TINCTURA CARDAMOMI COMPOSITA. *Compound tincture of cardamoms.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Cardamoms,	
	Caraway, āā, bruised .	ʒiiss.
	Cochineal, powdered .	ʒj.
	Cinnamon, bruised .	ʒv.
	Raisins [stoned] .	℥v.
	Proof spirit . .	Oij.

Macerate for 14 days, and strain. (Lond.)

Digest for seven days, strain, express strongly the residuum, and filter the liquors. This tincture may be also prepared by the method of percolation, if the solid materials be first beat together, moistened with a little spirit, and left thus for twelve hours before being put into the percolator. (Edin.)

Dubl. Ph. 1826.

℞ Cardamom seeds, husked and bruised,
Caraway seeds, bruised, āā . . ʒij.
Cinnamon bark, bruised . . ℥ss.
Proof spirit . . . . Oij.

Macerate for 14 days, and then filter.

TINCTURA CASCARILLÆ. *Tincture of cascarilla.*

Lond. Ph. 1836.

℞ Cascarilla, bruised . ℥v.
Proof spirit . . Oij.

Macerate for 14 days, and strain.

Edin. Ph. 1841.

℞ Cascarilla, in moderately fine powder . . ℥v.
Proof spirit . . Oij.

Proceed by procolation or digestion, as afterwards directed for tincture of cinchona.

Dubl. Ph. 1826.

℞ Cascarilla bark, coarsely powdered . ℥iv.
Proof spirit . . . . Oij.

Macerate for seven days, and then filter.

TINCTURA CASSIÆ. *Tincture of cassia.*

Edin. Ph. 1841.

℞ Cassia, in moderately fine powder . ℥iiiss.
Proof spirit . . . . Oij.

Digest for seven days, strain, express the residuum strongly, and filter. The tincture is more conveniently made by the process of percolation, the cassia being allowed to macerate in a little of the spirit for twelve hours before being put into the percolator.

TINCTURA CASTOREI. *Tincture of castor.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Castor, powdered . ℥iiss.
Rectified spirit . . Oij.

Macerate for 14 days, and strain. (Lond).

This tincture may be prepared either by digestion or percolation, like the tincture of cassia. (Edin.)

Dubl. Ph. 1826.

℞ Russian castor, powdered . . ℥ij.
Proof spirit . . . . Oij.

Macerate for seven days, and then filter.

TINCTURA CASTOREI AMMONIATA. *Ammoniated tincture of castor.*

Edin. Ph. 1841.

℞ Castor, bruised . , . . ℥iiss.
Assafœtida in small fragments . . ʒx.
Spirit of ammonia . . . Oij.

Digest for seven days in a well-closed vessel, strain and express strongly the residuum; and filter the liquor. This tincture cannot be so conveniently prepared by the method of percolation.

TINCTURA CATECHU. *Tincture of catechu.*

Lond. Ph. 1836.

℞	Catechu	℥iiiss.
	Cinnamon	℥iiss.
	Proof spirit	Oij.

Macerate for 14 days, and strain.

Dubl. Ph. 1826.

℞	Catechu	℥iij.
	Cinnamon bark	℥ij.
	Proof spirit	Oij.

Macerate for seven days, and filter.

Ed. Ph. 1841.

℞	Catechu, in moderately fine powder	℥iiiss.
	Cinnamon, in fine powder	℥iiss.
	Proof spirit	Oij..

Digest for seven days; strain and express strongly the residuum; filter the liquors. This tincture may be also prepared by the process of percolation, the mixed powders being put into the percolator without being previously moistened with the spirit.

TINCTURA CHIRAYTÆ. *Tincture of chirayta.*

℞	Chirayta	℥ij.
	Proof spirit	℥xvj.

Macerate for 14 days, and strain.

TINCTURA CINCHÔNÆ. *Tincture of cinchona.*

Lond. Ph. 1836.

℞	Heart-leaved cinchona, bruised	℥viij.
	Proof spirit	Oij.

Macerate for 14 days, and strain.

Dubl. Ph. 1826.

℞	Lance-leaved cinchona bark, coarsely powdered	℥iv.
	Proof spirit	Oij.

Digest for seven days, and filter.

Edin. Ph. 1841.

℞	Yellow bark in fine powder (or of any other species of cinchona, according to prescription)	℥viij.
	Proof spirit	Oij.

Percolate the bark with the spirit, the bark being previously moistened with a very little spirit, left thus for ten or twelve hours, and then firmly packed in the cylinder. This tincture may also be prepared, though much less expeditiously, and with much greater loss, by the usual process of digestion, the bark being in that case reduced to coarse powder only.

TINCTURA CINCHONÆ COMPOSITA. *Compound tincture of cinchona.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Lance-leaved cinchona, bruised	℥iv.
	Orange peel, dried	℥iij.
	Serpentary, bruised	ʒvi.
	Saffron	ʒij.
	Cochineal, powdered	ʒj.
	Proof spirit	Oij.

Macerate for 14 days, and strain. (Lond.)

Digest for seven days, strain, and press; or it may be made by percolation. (Edin.)

Dubl. Ph. 1826.

℞	Lance-leaved cinchona bark, coarsely powdered	℥ij.
	Orange peel, dried	℥ss.
	Virginia snake-root, bruised	ʒiij.
	Saffron	ʒj.
	Cochineal, in powder	℈ij.
	Proof spirit, *by measure*	℥xx.

Macerate for 14 days, and filter.

TINCTURA CINNAMOMI. *Tincture of cinnamon.*

Lond. Ph. 1836, Edin. Ph. 1841, and Dubl. Ph. 1826.

℞	Cinnamon bark, bruised	℥iiiss.
	Proof spirit	Oij.

Macerate for 14 days, and strain. (Lond. and Dubl.)

Proceed by percolation, or digestion, as directed for tincture of cassia. (Edin.)

TINCTURA CINNAMOMI COMPOSITA. *Compound tincture of cinnamon.*

Lond. Ph. 1836.

℞	Cinnamon, bruised	℥j.
	Cardamoms, bruised	℥ss.
	Long pepper, powdered,	
	Ginger, sliced, āā	ʒiiss.
	Proof spirit	Oij.

Macerate for fourteen days, and strain.

Edin. Ph. 1841.

℞	Cinnamon in coarse powder (fine, if percolation be followed),	
	Cardamom seeds, bruised, āā	℥j.
	Long pepper, ground finely	ʒiij.
	Proof spirit	Oij.

The tincture is best prepared by the method of percolation as directed for the compound tincture of cardamom. But it may also be made in the ordinary way by digestion for seven days, straining and expressing the liquor, and then filtering it.

TINCTURA COCCI. *Tincture of cochineal.*

Amst. Ph.

℞	Cochineal	1 part,
	Proof spirit	8 parts.

Macerate for eight days, and strain.

TINCTURA COLCHICI. *Tincture of colchicum.*

Lond. Ph. 1836.

℞	Meadow saffron seeds, bruised	℥v.
	Proof spirit	Oij.

Macerate for fourteen days, and strain.

Edin. Ph. 1841.

℞	Colchicum seeds, ground finely in a coffee-mill	℥v.
	Proof spirit	Oij.

This tincture is to be prepared like the tincture of cinchona; and percolation is much more convenient and speedy than digestion.

Dubl. Ph. 1826.

℞	Seeds of the meadow saffron	℥ij.
	Proof spirit	Oj.

Macerate for fourteen days, and filter.

TINCTURA COLCHICI COMPOSITA. *Compound tincture of colchicum.*

Lond. Ph. 1836.

℞	Meadow saffron seeds, bruised	℥v.
	Aromatic spirit of ammonia	Oij.

Macerate for fourteen days, and strain.

TINCTURA CONII. *Tincture of hemlock.*

Lond. Ph. 1836.

℞	Hemlock leaves, dried	℥v.
	Cardamoms, bruised	℥j.
	Proof spirit	Oij.

Macerate for fourteen days, and strain.

Dubl. Ph. 1826.

℞	Hemlock leaves, dried	℥ij.
	Cardamom seeds, bruised	℥j.
	Proof spirit	Oj.

Macerate for seven days, and filter.

Edin. Ph. 1841.

℞	Fresh leaves of conium	℥xij.
	Tincture of cardamom	Oss.
	Rectified spirit	Oiss.

Bruise the hemlock leaves; express the juice strongly; bruise the residuum; pack it firmly in a percolator; transmit first the tincture of cardamom and then the rectified spirit, allowing the spirituous liquors to mix with the expressed juice as they pass through. Add gently water enough to the percolator for pushing through the spirit remaining in the residuum. Filter the liquor after agitation.

TINCTURA CROTONIS. *Tincture of croton oil.*

Soubeiran.

℞	Croton oil	gtt. viij.
	Rectified spirit	f℥iv. Mix.

TINCTURA CROCI. *Tincture of saffron.*

Edin. Ph. 1841.

℞	Saffron, chopped fine	℥ij.
	Proof spirit	Oij.

This tincture is to be prepared like tincture of cinchona, either by percolation or by digestion, the former method being the more convenient and expeditious.

TINCTURA CUBEBÆ. *Tincture of cubeb.*

Lond. Ph. 1836.

℞	Cubebs, bruised	℥v.
	Rectified spirit	Oij.

Macerate for fourteen days, and strain.

Dubl. Ph. 1826. *Tinctura piperis cubebæ.*

℞	Cubebs	℥iv.
	Proof spirit	Oij.

Macerate for fourteen days, and filter.

TINCTURA CUSPARIÆ. *Tincture of cusparia.*

Edin. Ph. 1841.

℞	Cusparia, in moderately fine powder	℥ivss.
	Proof spirit	Oij.

This tincture is to be made like the tincture of cinchona, and most expeditiously by the process of percolation.

Dubl. Ph. 1826. *Tinctura angusturæ.*

℞	Angustura bark, coarsely powdered	℥ij.
	Proof spirit	Oij

Macerate for fourteen days, and then filter.

Tinctura digitalis. *Tincture of foxglove.*

Lond. Ph. 1836.

℞ Foxglove leaves, dried . ℥iv.
Proof spirit . . . Oij.
Macerate for fourteen days, and strain.

Dubl. Ph. 1826.

℞ The leaves of purple foxglove (rejecting the larger ones) dried and coarsely powdered ℥ij.
Proof spirit . . . . Oj.
Macerate for seven days, and filter.

Edin. Ph. 1841.

℞ Digitalis, in moderately fine powder . ℥iv.
Proof spirit . . . . Oij.

This tincture is best prepared by the process of percolation, as directed for the tincture of capsicum. If 40 fluidounces of spirit be passed through, the density is 944, and the solid contents of a fluidounce amount to 24 grains. It may also be made by digestion.

Tinctura digitalis etherea. *Ethereal tincture of digitalis.*

Soubeiran's Ph. 1840.

℞ Leaves of Digitalis purpurea . . 1 part,
Sulphuric ether . . . 4 „

Proceed by percolation in a closed funnel.

This tincture, which is generally considered as very effectual, is, on the contrary, regarded by some practitioners as possessing merely the properties peculiar to ether.

Tinctura ergotæ. *Tinctura secalis cornuti. Tincture of ergot of rye.*

℞ Ergot of rye, powdered . . . ℥ij.
Proof spirit . . . . Oj.
Macerate for a fortnight, and strain.

Tinctura ergotæ ætherea. *Ethereal tincture of ergot of rye.*

℞ Ergot of rye, powdered . . . ℥ij.
Clean sand . . . . ℥ij.
Ether . . . . . ℥ix.

Mix the powdered ergot with the sand; put them into a percolator; moisten them with the ether, and after allowing the mixture to stand for an hour, add the remainder of the ether, and let it percolate until f℥viij of tincture has been obtained.

Tinctura euphorbiæ. *Tincture of euphorbium.*

Pruss. Ph.

℞ Euphorbium . . . , 1 part,
Rectified spirit . . . 12 parts.
Macerate for eight days, and strain.

TINCTURA FERRI ACETATIS. *Tincture of acetate of iron.*

Dubl. Ph. 1826.

℞ Acetate of potash . . .	2 parts,
Sulphate of iron . . .	1 part,
Rectified spirit . . .	26 parts.

Rub the acetate of potash and sulphate of iron together in a mortar until it runs to a mass, then dry it with a medium heat; mix it with the spirit in a stoppered bottle; let it digest for seven days, occasionally shaking it, then decant the tincture.

TINCTURA FERRI ACETATIS ÆTHEREA. *Ethereal tincture of acetate of iron.*

Ph. Pruss.

To f℥ix of concentrated acetic acid add as much moist hydrated oxide of iron as will dissolve; filter the solution, and add f℥j of acetic ether, and f℥ij of rectified spirit.

TINCTURA GALLÆ. *Tincture of galls.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Galls, bruised . . .	℥v.
Proof spirit . . .	Oij.

Macerate for fourteen days, and strain. (Lond.)

This tincture may be prepared either by digestion or percolation, as directed for tincture of capsicum. (Edin.)

Dubl. Ph. 1826.

℞ Galls, powdered	℥iv.
Proof spirit	Oij.

Digest for seven days, and filter.

TINCTURA GALBANI. *Tincture of galbanum.*

Dubl. Ph. 1826.

℞ Galbanum, cut very small . .	℥ij.
Proof spirit	Oij.

Digest for seven days, and filter.

TINCTURA GENTIANÆ COMPOSITA. *Compound tincture of gentian.*

Lond. Ph. 1836.

℞ Gentian, sliced . . .	℥iiss.
Orange peel, dried . .	ʒx.
Cardamoms, bruised . .	ʒv.
Proof spirit . . .	Oij.

Macerate for fourteen days, and strain.

Dubl. Ph. 1826.

℞ Gentian root, sliced and bruised	℥ij.
Seville orange peel, dried .	℥j.
Cardamom seeds, husked .	℥ss.
Proof spirit . . .	Oij.

Macerate for fourteen days, and filter.

Edin. Ph. 1841.

℞ Gentian, sliced and bruised . .	℥iiss.
Dried bitter-orange peel, bruised .	ʒx.
Canella, in moderately fine powder .	ʒvi.
Cochineal, bruised . . .	ʒss.
Proof spirit	Oij.

Digest for seven days; strain and express strongly; and then filter the liquor. This tincture may be more conveniently prepared by percolation, as directed for the compound tincture of cardamom.

TINCTURA GUAIACI. *Tincture of guaiacum.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Guaiacum resin, bruised . . ℥vij.
Rectified spirit . . . . Oij.

Macerate for fourteen days, and strain. (Lond.)
Digest for seven days, and strain. (Edin.)

Dubl. Ph. 1826.

℞ Guaiacum . . . . ℥iv.
Rectified spirit . . . . Oij.

Macerate for seven days, and filter.

TINCTURA GUAIACI COMPOSITA. *Compound tincture of guaiacum.*

Lond. Ph. 1836.

℞ Guaiacum resin, bruised . ℥vij.
Aromatic spirit of ammonia . Oij.

Macerate for fourteen days, and strain.

Edin. Ph. 1841. *Tinctura guaiaci ammoniata.*

℞ Guaiac, in coarse powder . ℥vij.
Spirit of ammonia . . Oij.

Digest for seven days in a well-closed vessel, and then filter the liquor.

Dubl. Ph. 1826. *Tinctura guaiaci ammoniata.*

℞ Guaiacum . . . . ℥iv.
Aromatic spirit of ammonia . . ℔iss.

Macerate for seven days, and filter.

TINCTURA HELLEBORI. *Tincture of hellebore.*

Lond. Ph. 1836.

℞ Hellebore, bruised . . ℥v.
Proof spirit . . . Oij.

Macerate for fourteen days, and strain.

Dubl. Ph. 1826.

℞ Black hellebore root, coarsely powdered . . . ℥iv.
Proof spirit . . . . Oij.

Macerate for seven days, and filter.

TINCTURA HIBISCI ABELMOSCHI. *Tincture of musk seeds.*

Dr. Reece.

℞ Seeds of hibiscus abelmoschus . . ℥ij.
Proof spirit . . . . f℥xvj.

Macerate fourteen days, and strain.

TINCTURA HYOSCYAMI. *Tincture of henbane.*

Lond. Ph. 1836.

℞ Henbane leaves, dried . ℥v.
Proof spirit . . . Oij.

Macerate for fourteen days, and strain.

Dubl. Ph. 1826.

℞ Henbane leaves, dried . ℥v.
Proof spirit . . . Oij.

Digest for seven days, and strain.

Edin. Ph. 1841.

℞ Hyoscyamus, dried, and in moderately fine powder	℥v.
Proof spirit	Oij.

This tincture is best prepared by the process of percolation, as directed for tincture of capsicum; but it may also be obtained, though with greater loss, by the process of digestion.

TINCTURA INULÆ. *Tincture of elecampane.*

Codex.

℞ Powdered elecampane	℥iv.
Proof spirit	Oj.

Digest for fifteen days, and strain.

TINCTURA IODINII. *Tincture of iodine.*

Edin. Ph. 1841.

℞ Iodine	℥iiss.
Rectified spirit	Oij.

Dissolve the iodine in the spirit with the aid of a gentle heat and agitation; keep the tincture in well-closed bottles.

Dubl. Ph. 1826.

℞ Iodine	℈ij.
Rectified spirit	℥j.

Mix and dissolve the iodine by heat; keep the mixture in a well-closed vessel.

TINCTURA IODINII COMPOSITA. *Compound tincture of iodine.*

Lond. Ph. 1836.

℞ Iodine	℥i.
Iodide of potassium	℥ij.
Rectified spirit	Oij.

Macerate till they are dissolved, and strain.

TINCTURA IRIDIS. *Tincture of iris. Eau de violettes.*

Soubeiran's Ph. 1840.

℞ Florentine iris, powdered	1 part,
Alcohol, at 842 sp. gr.	8 parts.

Macerate for fifteen days, and strain.

TINCTURA JALAPÆ. *Tincture of Jalap.*

Lond. Ph. 1836, and Dubl. Ph. 1826.

℞ Jalap, bruised	℥x.
Proof spirit	Oij.

Macerate for fourteen days, and strain.

Edin. Ph. 1841.

℞ Jalap, in moderately fine powder	℥vij.
Proof spirit	Oij.

This tincture may be prepared either by digestion or percolation, as directed for tincture of cinchona.

TINCTURA KINO. *Tincture of kino.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Kino, bruised	℥iiss.
Rectified spirit	Oij.

Macerate for fourteen days, amd strain. (Lond.) Digest for seven days, and then filter. This tincture cannot be conveniently prepared by the process of percolation. (Edin.)

Dubl. Ph. 1826.

℞	Kino, in powder	℥iij.
	Proof spirit	Oij.

Macerate for seven days, and filter.

TINCTURA KRAMERIÆ. *Tincture of rhatany.*

U. S. Ph. 1840.

℞	Rhatany, in powder	℥vj.
	Diluted alcohol	Oij.

Macerate for fourteen days, express, and filter through paper.

TINCTURA LACTUCARII. *Tincture of lactucarium.*

Edin. Ph. 1841.

℞	Lactucarium, in fine powder	℥iv.
	Proof spirit	Oij.

This tincture is best prepared by percolation, as directed for tincture of myrrh; but may also be prepared by digestion with coarse powder of lactucarium.

TINCTURA LAVANDULÆ COMPOSITA. *Compound tincture of lavender.*

Lond. Ph. 1836.

℞	Spirit of lavender	Oiss.
	Spirit of rosemary	Oss.
	Cinnamon, bruised,	
	Nutmegs, bruised, āā	ʒiiss.
	Red saunders, sliced	ʒv.

Macerate for fourteen days, and strain.

TINCTURA LIGNI GUAIACI. *Tincture of guaiacum wood.*

Pruss. Ph.

℞	Guaiacum, rasped	℥iij.
	Sassafras	℥ij.
	Rhodium wood	℥ss.
	Red sandal wood	℥j.
	Yellow sandal wood	℥j.
	Rectified spirit	℔ij.

Macerate for eight days, and strain.

TINCTURA LOBELIÆ. *Tincture of lobelia.*

Edin. Ph. 1841.

℞	Lobelia, dried, and in moderately fine powder	℥v.
	Proof spirit	Oij.

This tincture is best prepared by the process of percolation, as directed for tincture of capsicum; but it may also be made in the usual way, by digestion.

U. S. Ph. 1840.

℞	Lobelia, the herb	℥iv.
	Diluted alcohol	Oij.

Macerate for fourteen days, express, and filter through paper.

TINCTURA LOBELIÆ ÆTHEREA. *Ethereal tincture of lobelia.*

Edin. Ph. 1841.

℞ Dry lobelia, in moderately fine powder	℥v.
Spirit of sulphuric æther	Oij.

This tincture is best prepared by percolation, as directed for tincture of capsicum; but it may be also obtained by digestion in a well-closed vessel for seven days.

TINCTURA LOBELIÆ ÆTHEREA. *Ethereal tincture of lobelia.*

Whitlaw.

℞ Lobelia inflata	℔j.
Rectified spirit	Oiv.
Spirit of nitrous ether	Oiv.
Ether	℥iv.

Macerate for fourteen days, and strain.

TINCTURA LUPULI. *Tincture of hops.*

Lond. Ph. 1836.

℞ Hops	℥vj.
Proof spirit	Oij.

Macerate for fourteen days, and strain.

Dubl. Ph. 1826. *Tinctura humuli.*

℞ Strobiles of the hop dried	℥v.
Proof spirit	Oij.

Macerate for fourteen days, frequently shaking, and filter.

Edin. Ph. 1841.

℞ Any convenient quantity of hops, recently dried; separate by friction and sifting the yellowish brown powder attached to their scales.

℞ Of this powder	℥v.
Rectified spirit	Oij.

Prepare the tincture by percolation or digestion, as directed for the tincture of capsicum.

TINCTURA MOSCHI. *Tincture of musk.*

Dubl. Ph. 1826.

℞ Musk, in powder	ʒij.
Rectified spirit	Oj.

Digest for seven days, and filter.

TINCTURA MYRRHÆ. *Tincture of myrrh.*

Lond. Ph. 1836.

℞ Myrrh, bruised	℥iij.
Rectified spirit	Oij.

Macerate for fourteen days, and strain.

Dubl. Ph. 1826.

℞ Myrrh, bruised	℥iij.
Proof spirit	Oiss.
Rectified spirit	Oss.

Digest for seven days, and filter.

Edin. Ph. 1841.

℞ Myrrh, in moderately fine powder	℥iiiss.
Rectified spirit	Oij.

Pack the myrrh very gently without any spirit in a percolator; then pour on the spirit; and when thirty-three fluidounces have passed through, agitate well to dissolve the oleo-resinous matter which first passes, and which lies at the bottom. This tincture is much less conveniently obtained by the process of digestion for seven days.

TINCTURA NUCIS VOMICÆ. *Tincture of nux vomica.*

Dubl. Ph. 1826.

℞	Seeds of the strychnos nux vomica, scraped	℥ij.
	Rectified spirit	℥viij.

Macerate for seven days, and filter.

TINCTURA OPII. *Tincture of opium.*

Lond. Ph. 1836.

℞	Hard opium, powdered	℥iij.
	Proof spirit	Oij.

Macerate for fourteen days, and strain.

Dubl. Ph. 1826.

℞	Turkey opium, coarsely powd.	ʒx.
	Proof spirit	Oj.

Macerate for fourteen days, and filter.

Edin. Ph. 1841.

℞	Opium, sliced	℥iij.
	Rectified spirit	Oj & f℥vij.
	Water	f℥xiiiss.

Digest the opium in the water at a temperature near 212° for two hours; break down the opium with the hand; strain, and express the infusion; macerate the residuum in the rectified spirit for about twenty hours, and then strain and express very strongly. Mix the watery and spirituous infusions, and filter.

This tincture is not easily obtained by the process of percolation; but when the opium is of fine quality, it may be prepared thus: slice the opium finely; mix the spirit and water; let the opium macerate in fourteen fluidounces of the mixture for twelve hours, and then break it down thoroughly with the hand; pour the whole pulpy mass and fluid into a percolator, and let the fluid part pass through, add the rest of the spirit without packing the opium in the cylinder, and continue the process of percolation till two pints are obtained.

TINCTURA OPII ACETATA. *Acetated tincture of opium.*

U. S. Ph. 1840.

℞	Opium	℥ij.
	Vinegar	f℥xij.
	Alcohol	Oss.

Rub the opium with the vinegar; then add the alcohol, and having macerated for fourteen days, express and filter through paper.

TINCTURA OPII AMMONIATA. *Ammoniated tincture of opium.*

Edin. Ph. 1841.

℞	Benzoic acid,	
	Saffron, chopped, āā	ʒvj.
	Opium, sliced	℥ss.
	Oil of anise	ʒj.
	Spirit of ammonia	Oij.

Digest for seven days, and then filter.

TINCTURA PIPERIS ANGUSTIFOLIÆ. *Tincture of mattico.*

Dr. H. Lane.

℞	Mattico leaves	℥iiss.
	Proof spirit	Oij.

Macerate for fourteen days, and strain.

TINCTURA PICIDIÆ ERYTHRINÆ. *Tincture of Jamaica dogwood.* (Hamilton.)

℞	Bark of Jamaica dogwood	℥j.
	Rectified spirit	℥xij

Macerate for fourteen days, and strain.

TINCTURA PYRETHRI. *Tincture of pellitory of Spain.*

℞	Pellitory of Spain root	℥iv.
	Rectified spirit	Oj.

Macerate for fourteen days, and strain.

TINCTURA QUASSIÆ. *Tincture of quassia.*

Edin. Ph. 1841.

℞	Quassia, in chips	ʒx.
	Proof spirit	Oij.

Digest for seven days, and then filter.

Dubl. Ph. 1826.

℞	Raspings of quassia wood	ʒj.
	Proof spirit	Oij.

Macerate for seven days, and filter.

TINCTURA QUASSIÆ COMPOSITA. *Compound tincture of quassia.*

Edin. Ph. 1841.

℞	Cardamom-seeds, bruised,	
	Cochineal, bruised, āā	℥ss.
	Cinnamon, in moderately fine powder,	
	Quassia, in chips, āā	ʒvj.
	Raisins	℥vij.
	Proof spirit	Oij.

Digest for seven days, strain the liquor, express strongly the residuum, and filter. This tincture may also be obtained by percolation as directed for compound tincture of cardamom, provided the quassia be rasped or in powder.

TINCTURA QUINÆ. *Tincture of quinine.*

Dr. Copland.

℞	Disulphate of quina	gr. xlvj.
	Compound tincture of orange-peel	f℥vss.
	Dilute sulphuric acid	fʒij.

Mix and filter.

TINCTURA RHEI. *Tincture of rhubarb.*

Edin. Ph. 1841.

℞	Rhubarb, in moderately fine powder	℥iiiss.
	Cardamom-seeds, bruised	℥ss.
	Proof spirit	Oij.

Mix the rhubarb and cardamom-seeds, and proceed by the process of percolation, as directed for tincture of cinchona. This tincture may be also prepared by digestion.

TINCTURA RHEI COMPOSITA. *Compound tincture of rhubarb.*

Lond. Ph. 1836.

℞	Rhubarb, sliced . .	℥iiss.
	Liquorice, bruised .	ʒvj.
	Ginger, sliced,	
	Saffron, āā . .	ʒiij.
	Proof spirit . .	Oij.

Macerate for fourteen days, and strain.

Dubl. Ph. 1826.

℞	Rhubarb root, sliced .	℥ij.
	Cardamom seeds, husked and bruised,	
	Liquorice root, bruised, āā	℥ss.
	Saffron . . .	ʒij.
	Proof spirit . .	Oij.

Macerate for seven days, and filter.

TINCTURA RHEI ET ALOES. *Tincture of rhubarb and aloes.*

Edin. Ph. 1841.

℞	Rhubarb, in moderately fine powder .	℥iss.
	Socotorine, or East Indian aloes, in moderately fine powder . .	ʒvj.
	Cardamom seeds, bruised . .	ʒv.
	Proof spirit	Oij.

Mix the powders, and proceed as directed for tincture of cinchona.

TINCTURA RHEI ET GENTIANÆ. *Tincture of rhubarb and gentian.*

Edin. Ph. 1841.

℞	Rhubarb, in moderately fine powder .	℥ij.
	Gentian, finely cut or in coarse powder	℥ss.
	Proof spirit	Oij.

Mix the powder, and proceed as directed for tincture of cinchona.

TINCTURA ROSÆ. *Tincture of rose.*

Mr. Squire.

℞	Rose petals, bruised , . .	℥v.
	Proof spirit made with rose-water .	Oj.

Digest for three days, frequently shaking, and press off. Digest the mass with Oss of proof spirit for three days, press off, and mix the two liquids to form the tincture for use.

TINCTURA SCILLÆ. *Tincture of squill.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Squill, fresh dried . . .	℥v.
	Proof spirit	Oij.

Macerate for fourteen days, and strain. (Lond.)

Prepare this tincture by percolation, as directed for tincture of cinchona, but without packing the pulp firmly in the percolator. It may likewise be obtained by digestion from the sliced bulb. (Edin.)

Dubl. Ph. 1826.

℞	Bulb of the squill, dried . .	℥iv.
	Proof spirit	Oij.

Macerate for seven days, then set it aside, and when the fæces have subsided, pour off the clear liquor.

TINCTURA SENNÆ COMPOSITA. *Compound tincture of senna.*

Lond. Ph. 1836.

℞	Senna . . .	℥iiiss.
	Caraway, bruised .	ʒiiiss.
	Cardamoms, bruised .	ʒj.
	Raisins, stoned . .	℥v.
	Proof spirit . .	Oij.

Macerate for fourteen days, and strain.

Dubl. Ph. 1826.

℞	Senna leaves . .	lbj
	Caraway seeds, bruised	℥iss.
	Cardamom seeds, husked and bruised .	℥ss.
	Proof spirit, *by measure*	cong. j.

Macerate for fourteen days, and filter.

Edin. Ph. 1841.

℞	Sugar	℥iiss.
	Coriander, bruised . . .	℥j.
	Jalap, in moderately fine powder .	ʒvj.
	Senna,	℥iv.
	Caraway, bruised,	
	Cardamom seeds, bruised, āā . .	ʒv.
	Raisins, bruised . . .	℥iv.
	Proof spirit	Oij.

Digest for seven days, strain the liquor, express strongly the residuum, and filter the liquids. This tincture may be more conveniently and expeditiously prepared by percolation, as directed for the Compound tincture of cardamom.

If Alexandrian senna be used for this preparation, it must be freed of cynanchum leaves by picking.

TINCTURA SERPENTARIÆ. *Tincture of serpentary, or snake-root.*

Lond. Ph. 1836.

℞	Serpentary, bruised .	℥iiiss.
	Proof spirit . .	Oij.

Macerate for fourteen days, and strain.

Edin. Ph. 1841.

℞	Serpentaria, in moderately fine powder .	℥iiiss.
	Cochineal, bruised .	ʒj.
	Proof spirit . .	Oij.

Proceed by percolation or digestion as for the Tincture of cinchona.

Dubl. Ph. 1826.

℞	Virginian snake-root, sliced and bruised	℥iij.
	Proof spirit	Oij.

Macerate for seven days, and filter.

TINCTURA STRAMONII. *Tincture of stramonium.*

U. S. Ph. 1840.

℞	Stramonium seeds, bruised . .	℥iv.
	Diluted alcohol . . .	Oij.

Macerate for fourteen days, express, and filter through paper

TINCTURA SARZÆ ALCOHOLICA. *Alcoholic tincture of sarsaparilla.*

Soubeiran's Ph. 1840.

℞	Sarsaparilla, divided . .	1 part.
	Alcohol, sp. gr. 923 . .	4 parts.

Macerate for fifteen days; strain with strong expression; filter.

TINCTURA VALERIANÆ. *Tincture of valerian.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞	Valerian, bruised . . .	℥v.
	Proof spirit . . .	Oij.

Macerate for fourteen days, and strain. (Lond.

Proceed by percolation or digestion, as for Tincture of cinchona. (Edin.)

Dubl. Ph. 1826.

℞	Valerian root, in powder . .	℥iv.
	Proof spirit . . .	Oij.

Macerate for seven days, and filter.

TINCTURA VALERIANÆ COMPOSITA. *Compound tincture of valerian.*

Lond. Ph. 1836.

℞	Valerian, bruised . . .	℥v.
	Aromatic spirit of ammonia . .	Oij.

Macerate for fourteen days, and strain.

TINCTURA VALERIANÆ AMMONIATA. *Ammoniated tincture of valerian.*

Edin. Ph. 1841.

℞	Valerian, bruised .	℥v.
	Spirit of ammonia .	Oij.

Macerate for fourteen days, and strain.

Dubl. Ph. 1826.

℞	Valerian root, powdered .	℥ij.
	Spirit of ammonia .	Oj.

Macerate for seven days, and filter.

TINCTURA ZINGIBERIS. *Tincture of ginger.*

Lond. Ph. 1836, Edin. Ph. 1841, and Dubl. Ph. 1826.

℞	Ginger, sliced . . .	℥iiss.
	Rectified spirit . . .	Oij.

Macerate for fourteen days, and strain. (Lond.) Proceed by percolation or digestion, as directed for Tincture of cinchona. (Edin.) Macerate for seven days, and strain. (Dubl.)

TRACING PAPER.

Paper brushed over with a thin varnish made of colourless Damara resin, the varnish being allowed to soak through the paper without any apparent coating of it remaining on the surface.

TRIPOLI.

The septariæ, ludi Helmonti, or waxen veins, found on the east coast of England, calcined; also, the clunch, or curl stone, of the Staffordshire mines, calcined. *Venice tripoli* is said to come from the island of Corfu; this variety is whitish yellow, or pale straw-coloured, which becomes pale rose-coloured when calcined. *Tripoli* is said to contain 80 *per cent.* of silica, derived, as Ehrenberg has shown, from the casts of animalcules. It is used for cleaning and polishing metals, &c.

TROCHISCI ACACIÆ. *Acacia lozenges.*

Edin. Ph. 1841.

℞	Gum arabic	℥iv.
	Starch	℥j.
	Pure sugar	lbj.

Mix and pulverize them, and make them into a proper mass with rose-water for forming lozenges.

TROCHISCI ACIDI TARTARICI. *Tartaric acid lozenges.*

Edin. Ph. 1841.

℞	Tartaric acid	ʒij.
	Pure sugar	℥viij.
	Volatile oil of lemons	♏x.

Pulverize the sugar and acid, add the oil, mix them thoroughly, and with mucilage beat them into a proper mass for making lozenges.

TROCHISCI ACIDI CITRICI. *Citric acid lozenges.*

Codex.

℞	Citric acid	ʒiij.
	Sugar	℥xvj.
	Essenee of lemon	gtt. xij.
	Mucilage of tragacanth	q. s.

Mix according to art, and divide into lozenges of twelve grains each.

TROCHISCI CAMPHORÆ. *Camphor lozenges.*

℞	Camphor (dissolved in spirit)	ʒij.
	Sugar	℥viij.

Mix, and add mucilage of tragacanth sufficient to form into a paste, to be divided into lozenges of ten grains each.

TROCHISCI CRETÆ. *Chalk lozenges.*

Edin. Ph. 1841, and U. S. Ph. 1840.

℞	Prepared chalk	℥iv.
	Gum arabic	℥j.
	Nutmeg	ʒj.
	Pure sugar	℥vj.

Reduce them to powder, and beat them with a little water into a proper mass for making lozenges.

TROCHISCI GLYCYRRHIZÆ. *Liquorice lozenges.*

Edin. Ph. 1841.

℞ Extract of liquorice,	
Gum arabic, āā	℥vj.
Pure sugar	lbj.

Dissolve them in a sufficiency of boiling water, and then concentrate the solution over the vapour-bath to a proper consistence for making lozenges.

TROCHISCI GLYCYRRHIZÆ ET OPII. *Liquorice and opium lozenges.*

U. S. Ph. 1840.

℞ Opium, in powder . . .	℥ss.
Liquorice, in powder,	
Sugar, in powder,	
Gum arabic, in powder, āā . .	℥x.
Oil of anise	fʒij.

Mix the powders intimately; then add the oil of anise, and with water form them into a mass, to be divided into troches, each weighing 6 grs.

TROCHISCI IPECACUANHÆ. *Ipecacuanha lozenges.*

U. S. Ph. 1840.

℞ Ipecacuanha, in powder . . .	℥ss.
Sugar, in powder . . .	℥xiv.
Arrow-root, in powder . . .	℥iv.
Mucilage of tragacanth . . .	q. s.

Mix the powders intimately, and with the mucilage form them into a mass, to be divided into troches each weighing 10 grains.

Each lozenge made as above contains about a quarter of a grain of ipecacuanha. They are frequently made four times this strength.

TROCHISCI LACTUCARII. *Lactucarium lozenges.*

Edin. Ph. 1841.

To be prepared with lactucarium, in the same proportion and in the same manner as the Opium lozenge.

Useful in tickling coughs.

TROCHISCI MAGNESIÆ. *Magnesia lozenges.*

Edin. Ph. 1841.

℞ Carbonate of magnesia .	℥vj.
Pure sugar . . .	℥iij.
Nutmeg	℈j.

Pulverize them, and with mucilage of tragacanth beat them into a proper mass for making lozenges.

U. S. Ph. 1840. *Trochisci magnesiæ.*

℞ Magnesia	℥iv.
Sugar	lbj.
Nutmeg	ʒj.
Mucilage of tragacanth .	q. s.

Rub the magnesia, sugar, and nutmeg together until they are thoroughly mixed, then with the mucilage form them into a mass, to be divided into troches each weighing 0 grains.

TROCHISCI MENTHÆ PIPERITÆ. *Peppermint lozenges.*

U. St. Ph. 1840.

℞	Oil of peppermint	fʒj.
	Sugar, in powder	lbj.
	Mucilage of tragacanth	q. s.

Rub the oil of peppermint with the sugar until they are thoroughly mixed, then with the mucilage form them into a mass, to be divided into troches each weighing 10 grains.

TROCHISCI MORPHIÆ. *Morphia lozenges,*

Edin. Ph. 1841.

℞	Muriate of morphia	℈j.
	Tincture of tolu	ʒss.
	Purge sugar	℥xxv.

Dissolve the muriate of morphia in a little hot water; mix it and the tincture of tolu with the sugar; and, with a sufficiency of mucilage, form a proper mass for making lozenges, each of which should weigh about 15 grains.

TROCHISCI MORPHIÆ ET IPECACUANHÆ. *Lozenges of morphia and ipecacuanha.*

Edin. Ph. 1841.

℞	Muriate of morphia	℈j.
	Ipecacuan, in fine powder	ʒj.
	Tincture of tolu	f℥ss.
	Pure sugar	℥xxv.

Dissolve the muriate in a little hot water; mix it with the tincture and the ipecacuan and sugar, and, with a sufficiency of mucilage, beat the whole into a proper mass, which is to be divided into 15-grain lozenges.

TROCHISCI OPII. *Opium lozenges.*

Edin. Ph. 1841.

℞	Opium	ʒij.
	Tincture of tolu	℥ss.
	Pure sugar, in fine powder	℥vj.
	Powder of gum arabic,	
	Extract of liquorice, āā	℥v.

Reduce the opium to a fluid extract; mix it intimately with the liquorice, previously reduced to the consistence of treacle; add the tincture; sprinkle the gum and sugar into the mixture, and beat it into a proper mass, which is to be divided into lozenges of 10 grains.

TROCHISCI SODÆ BICARBONATIS. *Lozenges of bicarbonate of soda.*

Edin. Ph. 1841.

℞	Bicarbonate of soda	℥j.
	Pure sugar	℥iij.
	Gum arabic	℥ss.

Pulverize them, and with mucilage beat them into a proper mass for making lozenges.

Trochisci rhei. *Tabellæ de rheo. Rhubarb lozenges. Rhubarb tablets.*

Codex, 1818.

℞ Powdered rhubarb	℥ss.
Powdered sugar	℥v.
Mucilage of tragacanth, made with cinnamon water	q. s.

Make it into a paste, and divide into tablets, each weighing 12 grains.

Trochisci rhei aromatici. *Aromatic rhubarb lozenges. Live long.*

1.

℞ Powdered rhubarb,	
Powdered ginger, āā	℥j.
Sugar	lbiss.
Oil of caraways	gtt. xx.
Water	q. s.

2.

℞ Powdered rhubarb,	
Powdered ginger,	
Powdered cardamoms, āā	℥j.
Sugar	lbiss.
Water	q. s.

Mix as No. 1.

Dissolve the sugar with a small quantity of water over a gentle fire, then add the powders, mixed, and after removing them from the fire, mix in the oil, pour the mixture on to an oiled slab, and spread it out with a hot iron.

Tutia. *Tutty. Impure oxide of zinc.*

This is found deposited in the chimneys of the furnaces in which lead ores containing zinc, or ores mixed with *lapis calaminaris*, are smelted. It forms incrustations on the flues, but when prepared for use in medicine is in the form of a brown powder, sometimes having a shade of blue.

Unguentum acidi nitrici. *Nitric acid ointment.*

Dubl. Ph. 1826.

℞ Olive oil	lbj.
Prepared lard	℥iv.
Nitric acid	f℥vss.

Melt the lard with the oil in a glass vessel, and when they begin to concrete add the acid; then stir them constantly with a glass rod until they become firm.

Unguentum acidi sulphurici. *Sulphuric acid ointment.*

Dubl. Ph. 1826.

℞ Sulphuric acid	ʒj.
Prepared hog's-lard	℥j. Mix.

Unguentum æruginis. *Ointment of verdigris.*

Edin. Ph. 1841.

℞ Resinous ointment	℥xv.
Verdigris, in fine powder	℥j.

Melt the ointment, sprinkle into it the powder of verdigris, and stir the mixture briskly as it cools and concretes.

Dubl. Ph. 1826.

℞ Prepared verdigris	℥ss.
Olive oil	℥j.
Ointment of white resin	lbj.

Rub the verdigris with the oil, then add them to the ointment of white resin previously melted, and mix.

UNGUENTUM ALBUM CAMPHORATUM. *Camphorated white ointment.*

Lond. Ph. 1746.

℞ Olive oil	℥xvj.
White wax	℥iv.
Spermaceti	℥iij.
Camphor	ʒiss.

Edin. Ph. 1740.

℞ Spermaceti ointment	℥x.
Cerusse (white lead)	℥ij.
Camphor (rubbed with a little oil)	ʒiss.

Mix.

Melt the wax and spermaceti with the oil, and when they have cooled, rub the ointment with the camphor dissolved in a little oil. (Lond.)

UNGUENTUM ALOES CUM PETROLEO. *Ointment of aloes with petroleum.*

Ph. Bat. 1805.

℞ Cape aloes, powdered	℥ij.
Inspissated ox-gall,	
Petroleum, āā	℥iij.
Hog's lard, purified	lbij.

With the axunge, melted by a gentle heat, mix the powder and the gall, constantly stirring; and then to the mass, removed from the fire and well nigh cold, add the petroleum.

UNGUENTUM ALTHÆÆ. *Marshmallow ointment.*

Lond. Ph. 1746.

℞ Oil of mucilages	lbij.
Bees wax	lbss.
Resin	℥iij.
Venice turpentine	℥ss.

Mix with heat.

Olive oil is frequently substituted for oil of mucilages in making this ointment.

UNGUENTUM ANTIMONII POTASSIO-TARTRATIS. *Ointment of potassio-tartrate of antimony.* (Lond.) *Unguentum antimoniale.* (Edin.)

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Potassio-tartrate of antimony	ʒj.
Lard	℥iv.

Mix.

Dubl. Ph. 1826. *Unguentum tartari emetici.*

℞ Emetic tartar	ʒj.
Lard	℥j.

Mix.

UNGUENTUM AQUÆ ROSÆ. *Ointment of rose water.*

U. St. Ph. 1840.

℞ Rose water,	
Oil of almonds, āā	f℥ij.
Spermaceti	℥ss.
White wax	ʒj.

Melt together by means of a water-bath, the oil, spermaceti, and wax; then add the rose water, and stir the mixture constantly until it is cold.

UNGUENTUM BASILICUM VIRIDE. *Green basilicum ointment.*

Lond. Ph. 1746.

℞	Yellow basilicum	℥viij.
	Olive oil	f℥iij.
	Prepared verdigris	℥j.

Mix, and make them into an ointment.

UNGUENTUM CALAMINÆ. *Calamine ointment.*

Dubl. Ph. 1826.

℞	Ointment of yellow wax	lbv.
	Prepared calamine	lbj.

Rub the calamine to a fine powder, then add the ointment, and mix them.

UNGUENTUM CANTHARIDIS. *Ointment of cantharides.*

Lond. Ph. 1836.

℞	Cantharides, rubbed to a very fine powder	℥j.
	Distilled water	f℥iv.
	Cerate of resin	℥iv.

Boil down the water with the cantharides to half, and strain. Mix the cerate with the strained liquor; afterwards let it evaporate to a proper consistence.

Dubl. Ph. 1826.

℞	Spanish flies, reduced to a very fine powder	℥ij.
	Distilled water, *by measure*	℥viij.
	Ointment of white resin	℥viij.

Boil the water with the flies down to one-half, and strain; mix the cerate with the strained liquor, then evaporate the mixture to a proper consistence.

Edin. Ph. 1841.

℞	Resinous ointment	℥vij.
	Cantharides, in very fine powder	℥j.

Melt the ointment; sprinkle into it the cantharides powder; and stir the mixture briskly, as it concretes on cooling.

UNGUENTUM INFUSI CANTHARIDIS. *Ointment of infusion of cantharides.*

Edin. Ph. 1841.

℞	Cantharides, in moderately fine powder, Resin, Bees'-wax, āā	℥j.
	Venice turpentine, Axunge, āā	℥ij.
	Boiling water	f℥v.

Infuse the cantharides in the water for one night, squeeze strongly, and filter the expressed liquid. Add the axunge, and boil till the water is dispersed. Then add the wax and resin; and when these have become liquid, remove the vessel from the fire, add the turpentine, and mix the whole thoroughly.

UNGUENTUM CERÆ ALBÆ. *Ointment of white wax.*

Dubl. Ph. 1826.

℞	White wax	lbj.
	Prepared hog's-lard	lbiv.

Make an ointment.

UNGUENTUM CERÆ FLAVÆ. *Ointment of yellow wax.*

Dubl. Ph. 1826.

Made in the same manner, except that yellow wax is employed.

UNGUENTUM CETACEI. *Ointment of spermaceti.*

Lond. Ph. 1836.

℞	Spermaceti	ʒvj.
	White wax	ʒij.
	Olive oil	f℥iij.

When they are melted together with a slow fire, stir constantly until they become cold.

Dubl. Ph. 1826.

℞	White wax	lbss.
	Spermaceti	lbj.
	Prepared hog's-lard	lbiij.

Melt them, and while they are growing stiff, stir them with a wooden rod.

UNGUENTUM COCCULI. *Ointment of cocculus.*

Edin. Ph. 1841.

Take any convenient quantity of cocculus indicus, separate and preserve the kernels, beat them well in a mortar, first alone and then in a little axunge; and then add axunge till it amounts altogether to five times the weight of the kernels.

UNGUENTUM CONII. *Ointment of hemlock.*

Dubl. Ph. 1826.

℞	Fresh leaves of hemlock,	
	Prepared hog's-lard, āā	lbij.

Boil the leaves in the lard until they become crisp, then express through linen.

This is used as a sedative and anodyne application to foul, cancerous, and irritable sores.

UNGUENTUM CREASOTI. *Ointment of creasote.*

Lond. Ph. 1836.

℞	Creasote	fʒss.
	Lard	℥j.

Rub and mix them.

Edin. Ph. 1841.

℞	Axunge	℥iij.
	Creasote	ʒj.

Melt the axunge, add the creasote, stir them briskly, and continue to do so as the mixture concretes on cooling.

UNGUENTUM ELEMI. *Ointment of elemi.*

Lond. Ph. 1836.

℞	Elemi	lbj.
	Common turpentine	℥x.
	Suet	lbij.
	Olive oil	f℥ij.

Melt the elemi with the suet; then remove them from the fire, and immediately mix with them the turpentine and the oil; afterwards press through a linen cloth.

Dubl. Ph. 1826.

℞	Elemi resin	lbj.
	White wax	lbss.
	Prepared hogs'-lard	lbiv.

Make an ointment, which, while yet hot, should be strained through a sieve.

UNGUENTUM GALLÆ COMPOSITUM. *Compound ointment of gall.*

Lond. Ph. 1836.

℞	Galls, rubbed to very fine powder	ʒij.	
	Lard	℥ij.	
	Hard opium, powdered	ʒss.	Mix.

UNGUENTUM GALLÆ ET OPII. *Ointment of gall and opium.*

Edin. Ph. 1841.

℞	Galls, in fine powder	ʒij.
	Opium, in powder	ʒj.
	Axunge	℥j.

Triturate them together into a uniform mass.

UNGUENTUM GALLARUM. *Ointment of galls.*

Dubl. Ph. 1826.

℞	Galls, reduced to a very fine powder	℥j.
	Prepared hog's-lard	℥viij.

Mix so as to form an ointment.

UNGUENTUM HYDRARGYRI FORTIUS. *Stronger ointment of mercury.*

Lond. Ph. 1836.

℞	Mercury	lbij.
	Lard	℥xxiij.
	Suet	℥j.

First rub the mercury with the suet and a little of the lard until globules can no longer be seen; then add that which is left of the lard, and mix.

UNGUENTUM HYDRARGYRI. *Ointment of mercury.*

Edin. Ph. 1841.

℞	Mercury	lbij.
	Axunge	℥xxiij.
	Suet	℥j.

Triturate the mercury with the suet and a little of the axunge till globules are no longer visible; then add the rest of the axunge, and mix the whole thoroughly. This ointment is not well prepared so long as metallic globules may be seen in it with a magnifier of four powers. The mercurial ointment with the proportions here directed may be diluted at pleasure with twice or thrice its weight of axunge.

Dubl. Ph. 1826.

℞	Purified mercury,	
	Prepared hog's-lard, āā	an equal weight.

Rub them together in a marble or iron mortar, till the globules of mercury disappear.

UNGUENTUM HYDRARGYRI MITIUS. *Milder mercurial ointment.*

Lond. Ph. 1836.

℞	Stronger ointment of mercury	℔j.
	Lard	℔ij.

Unguentum hydrargyri nitratis. *Ointment of nitrate of mercury.*

Lond. Ph. 1836

℞	Mercury	℥j.
	Nitric acid	fʒxj.
	Lard	℥xj.
	Olive oil	f℥iv.

First dissolve the mercury in the acid; then mix the solution while hot with the lard and oil mixed together.

Dubl. Ph. 1826.

℞	Purified mercury, *by weight*	℥j.
	Nitric acid	ʒxiss.
	Olive oil	Oj.
	Prepared hog's-lard	℥iv.

Dissolve the mercury in the acid, then having melted the oil and lard together, mix them and make an ointment in the same manner as the ointment of nitric acid.

Edin. Ph. 1841. *Unguentum citrinum. Citrine ointment.*

℞	Pure nitric acid	f℥viij & fʒvj
	Mercury	℥iv.
	Axunge	℥xv.
	Olive oil	f℥xxxij.

Dissolve the mercury in the acid with the aid of a gentle heat. Melt the axunge in the oil with the aid of a moderate heat in a vessel capable of holding six times the quantity; and while the mixture is hot, add the solution of mercury, also hot, and mix them thoroughly. If the mixture do not froth up, increase the heat a little till this take place. Keep this ointment in earthenware vessels, or in glass vessels secluded from the light.

Unguentum hydrargyri nitrico-oxydi. *Ointment of nitric-oxide of mercury.*

Lond. Ph. 1836, and Dubl. Ph. 1826.

℞	Nitric-oxide of mercury	ʒj.
	White wax	℥ij.
	Lard	℥vj.

Add the nitric-oxide of mercury, rubbed to very fine powder, to the wax and lard, melted together, and mix.

Edin. Ph. 1841. *Unguentum oxidi hydrargyri.*

℞	Red oxide of Mercury	ʒj.
	Axunge	℥viij.

Triturate them into a uniform mass.

Unguentum hydrargyri ammonio-chloridi. *Ointment of ammonio-chloride of mercury.* (L.) *White precipitate ointment.*

Lond. Ph. 1836.

℞	Ammonio-chloride of mercury . . .	ʒj.
	Lard . . .	℥iss.

Add the ammonio-chloride of mercury to the lard, melted over a slow fire, and mix.

Edin. Ph. 1841. *Unguentum precipitati albi.*

℞	White precipitate . .	ʒij.
	Axunge . . .	℥iij.

Melt the axunge, add the white precipitate, and stir the mixture briskly while it concretes on cooling.

Dubl. Ph. 1826. *Uuguentum submuriatis hydrargyri ammoniati.*

℞	Ammoniated submuriate of mercury .	ʒj.
	Prepared hog's-lard . . .	℥iss.

Having melted the lard, and allowed it to begin to cool, add the ammoniated submuriate of mercury, and mix them well.

UNGUENTUM HYDRARGYRI IODIDI. *Ointment of iodide of mercury.*

Lond. Ph. 1836.

℞	Iodide of mercury . . .	℥j.
	White wax	℥ij.
	Lard	℥vj.

Add the iodide of mercury to the wax and lard melted together, and

UNGUENTUM HYDRARGYRI BINIODIDI. *Ointment of biniodide of mercury.*

Lond. Ph. 1836.

℞	Biniodide of mercury . . .	℥j.
	White wax	℥ij.
	Lard	℥vj.

Add the biniodide of mercury to the wax and lard melted together, and mix.

UNGUENTUM IODINII COMPOSITUM. *Compound ointment of iodine.*

Lond. Ph. 1836.

℞	Iodine	ʒss.
	Iodide of potassium . . .	ʒj.
	Rectified spirit , . . .	fʒj.
	Lard	℥ij.

First rub the iodine and iodide of potassium with the spirit, then mix with the lard.

UNGUENTUM IODINII. *Ointment of iodine.*

Edin. Ph. 1841.

℞	Iodine	ʒj.
	Iodide of potassium . . .	ʒij.
	Axunge	℥iv.

Triturate the iodine and iodide together, and then add gradually the axunge, continuing the trituration till a uniform ointment be obtained.

UNGUENTUM IODINII. *Ointment of iodine.*

Dubl. Ph. 1826.

℞	Iodine	℈j.
	Prepared hog's-lard	℥j.

Rub them together so as to form an ointment.

UNGUENTUM LAURINUM. *Laurine ointment.*

Pharm. Bat. 1805.

℞	Mutton suet, purified	℥viij.
	Laurel oil	℥x.
	Oil of turpentine	℥j.
	Oil of amber, purified	℥ss.

With the suet, melted by a gentle heat, mix the laurel oil; then add the rest, and stir the mass, until it has cooled.

UNGUENTUM MEZEREI. *Ointment of mezereon.*

U. S. Ph. 1840.

℞	Mezereon, sliced tranversely	℥iv.
	Lard	℥xiv.
	White wax	℥ij.

Moisten the mezereon with a little spirit, and beat it in an iron mortar until reduced to a fibrous mass; then digest it with the lard, in a salt water bath, for 12 hours, strain with strong expression, and allow the strained liquor to cool slowly, so that any undissolved matters may subside. From these separate the medicated lard, and melt it with the wax at a moderate heat, and stir them constantly till they are cold.

UNGUENTUM PICIS LIQUIDÆ. *Tar ointment.*

Lond. Ph. 1836.

℞	Liquid pitch (tar)	
	Suet, āā	lbj.

Melt them together, and press through a linen cloth.

Dubl. Ph. 1826.

℞	Tar,	
	Mutton suet, āā	lbss.

Mix them together, and strain through a sieve.

Edin. Ph. 1841.

℞	Tar	℥v.
	Bees'-wax	℥ij.

Melt the wax with a gentle heat, add the tar, and stir the mixture briskly while it concretes on cooling.

UNGUENTUM PICIS NIGRÆ. *Ointment of black pitch. Black basilicum.*

Lond. Ph. 1836.

℞	Black pitch,	
	Wax,	
	Rosin, āā	℥ix.
	Olive oil	f℥xvj.

Melt them together, and press through a linen cloth.

UNGUENTUM PIPERIS NIGRI. *Ointment of black pepper.*

Dubl. Ph. 1826.

℞	Prepared hog's-lard	lbj.
	Black pepper, reduced to powder	℥iv.

Make an ointment.

UNGUENTUM PLUMBI COMPOSITUM. *Compound ointment of lead.*

Lond. Ph. 1836.

℞	Prepared chalk	℥viij.
	Distilled vinegar	f℥vj.
	Plaster of lead	lbiij.
	Olive oil	Oj.

Melt the plaster in the oil with a slow fire; then gradually add the chalk separately mixed with the vinegar, the effervescence being finished, and stir constantly until they are cooled.

UNGUENTUM PLUMBI ACETATIS. *Ointment of acetate of lead.*

Edin. Ph. 1836.

℞	Simple ointment	℥xx.
	Acetate of lead, in fine powder	ʒj.

Mix them thoroughly.

Dubl. Ph. 1826.

℞	Ointment of white wax	lbiss
	Acetate of lead	ʒj.

Make an ointment.

UNGUENTUM PLUMBI CARBONATIS. *Ointment of carbonate of lead.*

Edin. Ph. 1841.

℞	Simple ointment	℥v
	Carbonate of lead	ʒj.

Mix them thoroughly.

Dubl. Ph. 1826.

℞	Carbonate of lead, reduced to a very fine powder	ʒij.
	Ointment of white wax	lbj.

Make an ointment.

UNGUENTUM PLUMBI IODIDI. *Ointment of iodide of lead.*

Lond. Ph. 1836.

℞	Iodide of lead	ʒj.
	Lard	℥viij.

Rub together, and mix.

UNGUENTUM POTASSÆ HYDRIODATIS. *Ointment of the hydriodate of potash.*

Dubl. Ph. 1826.

℞	Hydriodate of potash	℈j.
	Prepared hog's-lard	ʒj.

Rub them together and form an ointment.

UNGUENTUM POPULEUM. *Ointment of poplar.*

Deschamps.

℞	Buds of the black poplar	2 parts.
	Water	1 part.
	Lard	12 parts.

Boil together until the moisture is evaporated, then strain.

The resin of the poplar buds is said to preserve the lard from becoming rancid.

UNGUENTUM POPULEUM COMPOSITUM. *Compound ointment of poplar.*

Codex.

℞ Buds of the black poplar	3 parts.
Fresh leaves of white poppy,	
,, Belladonna,	
,, Henbane,	
,, Solanum nigrum, āā	2 parts.
Lard	16 parts.

Bruise the leaves in a marble mortar, put them into a pan with the lard, and heat them over a gentle fire until the moisture is all evaporated, then add the poplar buds, bruised, and digest for 24 hours; strain, press, and after the dregs have subsided, pour off the clear ointment.

UNGUENTUM RESINÆ ALBÆ. *Ointment of white resin. Yellow basilicum.*

Dubl. Ph. 1826.

℞ Yellow wax	lbj.
White resin	lbij.
Prepared hog's-lard	lbiv.

Make an ointment, which, while yet hot, should be strained through a sieve.

Edin. Ph. 1841. *Unguentum resinosum.*

℞ Resin	℥v.
Axunge	℥viij.
Bees' wax	℥ij.

Melt them together with a gentle heat, and then stir the mixture briskly while it cools and concretes.

UNGUENTUM SABINÆ. *Savine ointment.*

Dubl. Ph. 1826.

℞ Fresh leaves of savine, stripped from their stalks and bruised	lbss.
Prepared hog's-lard	lbij.
Yellow wax	lbss.

Boil the leaves in the lard, until they become crisped, then strain by expression; lastly, add the wax, and melt all together.

UNGUENTUM SAMBUCI. *Elder ointment. Elder-flower ointment.*

Lond. Ph. 1836.

℞ Elder (flowers)	
Lard, āā	lbij.

Boil the elder flowers in the lard until they become crisp; then press through a linen cloth.

UNGUENTUM SAMBUCI. *Elder ointment. Green elder ointment.*

Dubl. Ph. 1826.

℞ Fresh leaves of elder	lbiij.
Prepared hog's-lard	lbiv.
Prepared mutton suet	lbij.

Make an ointment in the same manner as the savine ointment.

UNGUENTUM SIMPLEX. *Simple ointment.*

Edin. Ph. 1841.

℞ Olive oil	f℥vss.
White wax	℥ij.

Melt the wax in the oil, and stir the mixture briskly while it concretes on cooling.

UNGUENTUM SCROPHULARIÆ. *Ointment of scrophularia.*

Dubl. Ph. 1826.

℞ Fresh leaves of the knotty-rooted figwort,	
Prepared hog's-lard, āā	lbij.
Prepared mutton suet	lbj.

Boil the leaves in the fat until they become crisp, then strain by expression.

Use. This ointment has been found to act almost as a specific in a malignant disease to which children are liable, called "burnt holes." It has also been found useful in tinea capitis, impetigo, and other skin diseases.

UNGUENTUM STRAMONII. *Ointment of stramonium.*

U. S. Ph. 1840.

℞ Fresh stramonium leaves, cut	lbj.
Lard	lbiij.
Yellow wax	lbss.

Boil the stramonium leaves in the lard, until they become friable, then strain through linen; lastly, add the wax previously melted, and stir them until they are cold.

UNGUENTUM SULPHURIS. *Sulphur ointment.*

Lond. Ph. 1836.

℞ Sulphur	℥iij.
Lard	lbss.
Oil of bergamot	♏xx.

Mix.

Edin. Ph. 1841.

℞ Axunge	℥iv.
Sublimed sulphur	℥j.

Mix them thoroughly together.

Dubl. Ph. 1826.

℞ Prepared hog's-lard	lbiv.
Sublimed sulphur	lbj.

Rub the sulphur into fine powder and mix it with the lard.

UNGUENTUM SULPHURIS COMPOSITUM. *Compound sulphur ointment.*

Lond. Ph. 1836.

℞ Sulphur	lbss.
White hellebore, powdered	℥ij.
Nitrate of potash	ʒ ·
Soft soap	lbss.
Lard	lbiss.
Oil of bergamot	♏xxx. Mix.

UNGUENTUM TABACI. *Ointment of tobacco.*

U. S. Ph. 1840.

℞	Fresh tobacco, cut in pieces	℥ij.
	Lard	lbj.

Boil the tobacco in the lard over a gentle fire till it becomes friable, then strain through linen.

UNGUENTUM VERATRI. *Ointment of white hellebore.*

Lond. Ph. 1836.

℞	White hellebore, powdered	℥ij.
	Lard	℥viij.
	Oil of lemons	♏xx.

Mix.

Dubl. Ph. 1826.

℞	Of the root of white hellebore, reduced to powder	℥iij.
	Prepared hog's-lard	

Make an ointment.

UNGUENTUM ZINCI. *Ointment of zinc.*

Lond. Ph. 1836.

℞	Oxide of zinc	ʒj.
	Lard	℥vj.

Mix.

Edin. Ph. 1841.

℞	Simple liniment	℥vj.
	Oxide of zinc	ʒj.

Mix them thoroughly together.

Dubl. Ph. 1826.

℞	Ointment of white wax	lbj.
	Oxide of zinc, prepared in the same manner as chalk,	℥ij.

Melt the ointment, and mix in the oxide in very fine powder.

USQUEBAGH, sive *Aqua vitæ*, Hibernis popularis.

Lond. Ph. 1677.

℞	Good brandy	lbxxiv.
	Liquorice root	lbj.
	Raisins, stoned	lbss.
	Cloves	℥ss.
	Mace, Ginger, āā	ʒij.

Macerate for 14 days, and strain.

VARNISH.

A solution of resins in spirits or oils; used for covering the surfaces of wood or metals, painted or otherwise, from the influence of the air, &c. There are two kinds of varnishes distinguished as *Spirit varnishes*, and *Fat varnishes*.

SPIRIT VARNISHES.

These are solutions of resins in rectified spirit of wine, or spirit of turpentine. Heat is generally applied to facilitate the solution, and as some resins, especially copal, are, even with heat, difficult of solution in spirit of wine, camphor or some volatile oils are sometimes added to increase the solvent power of the spirit.

AMBER VARNISH.

1.

℞ Amber, in powder,	
Sandarach, in powder,	
Mastic, in powder, āā	12 parts.
Rectified spirit	100 „

Digest with the heat of a sand-bath until the resins are dissolved, then strain.

2.

(*For metals.*)

℞ Amber,	
Copal, āā	60 parts.
Black rosin	30 „

Melt, and add sufficient spirit of turpentine to make it of the proper consistence.

3.

(*For gilded wood, &c.*)

℞ Amber	60 parts.
Black rosin	15 „

Melt with a little oil of turpentine, then add,

Elemi	30 parts.
Spirit of turpentine	375 „

Mix, and strain.

4.

(*For water colours.*)

℞ Amber	30 parts.
Camphor	0·1 „
Rectified spirit	150 „

Digest until dissolved, then strain.

BLACK VARNISH.

1.

(*For papier-maché objects.*)

℞ Amber,	
Black rosin,	
Sandarach, āā	30 parts.
Spirit of turpentine	375 „

Dissolve with heat, and add of the best lamp-black sufficient to colour it.

2.

(*For iron plate.*)

℞ Amber	90 parts.
Black rosin	60 „

Melt, and add,

Spirit of turpentine	45 „
Painters' varnish	45 „

Mix.

CHINESE VARNISH.

℞ Mastic,	
Sandarach, āā	6 parts.
Rectified spirit	50 „

Digest until dissolved, then strain.

COPAL VARNISH.

1.

℞ Copal, in coarse powder	10 parts.
Clean sand	10 „
Camphor	1 part.
Rectified spirit	100 „

Mix the copal and sand, and enclose them in a linen bag. Dissolve the camphor in the spirit, and put them into a cohobation apparatus, suspending the bag of resin near the top of the liquid. Boil the spirit until the resin is dissolved.

2.

℞ Copal	90 parts.
Sandarach	180 „
Mastic	90 „
Venice turpentine	75 „
Clean sand	100 „
Rectified spirit	1000 „

Dissolve as No. 1.

Note.—Anime is generally substituted for copal in making these varnishes.

LAC VARNISH.

℞ Shellac	90 parts,
Venice turpentine	4 „
Rectified spirit	500 „

Digest until dissolved, then strain.

LACQUER.

1.

℞	Shellac	120 parts.
	Sandarach	45 „
	Mastic	30 „
	Amber	30 „
	Black rosin	90 „
	Dragon's blood	30 „
	Turmeric, Gamboge, āā	24 „
	Rectified spirit	1000 „

Digest until dissolved, then strain.

2.

℞	Seed lac	120 parts.
	Sandarach	120 „
	Dragon's blood	16 „
	Gamboge	2 „
	Turmeric	2 „
	Venice turpentine	50 „
	Clean sand	150 „
	Rectified spirit	1000 „

Digest in a sand-bath, and strain.

3.

℞	Seed lac, Gamboge, Dragon's blood, āā	120 parts
	Saffron	30 „
	Rectified spirit	1000 „

Digest with heat, and strain.

4.

℞	Seed lac, Sandarach, āā	120 „
	Dragon's blood	15 „
	Turmeric	2 „
	Gamboge	2 „
	Venice turpentine	60 „
	Spirit of turpentine	1000 „

Digest with heat, and strain

Note.—Aloes is sometimes added to these, to give a darker colour.

PICTURE VARNISH.

1.

Mastic varnish.

℞	Mastic	360 parts.
	Venice turpentine	45 „
	Camphor	15 „
	Spirit of turpentine	1000 „

Dissolve with heat.

2.

℞	Copal, or Anime	60 parts.
	Camphor	4 „
	Oil of spike lavender	180 „

Disolve with heat; then add,

Spirit of turpentine, sufficient to give it the proper consistence.

FAT VARNISHES.

These are solutions of resins in fatty oils, generally linseed oil, to which, however, a little spirit of turpentine is added. The following instructions for manufacturing these varnishes have been furnished by Mr. Davidson, who was for many years extensively engaged in the manufacture of them.

Pure linseed oil, not less than a year old, should be used. In making *body*, and *carriage varnish*, the oil must be previously submitted to a process called *clarifying*. This consists in heating it in a clean copper boiler to a temperature of about 280° Fah., adding two pounds and a-half of calcined white vitriol to every fifty gallons of oil; keeping it at the above temperature for about an hour; then removing the fire, letting the oil stand for twenty-four hours, and decanting off the clear portion. After this operation the oil should stand for a few weeks to deposit any sediment, before being made into varnish.

In making fat varnishes, a vessel called a *running-pot* is used. It consists of a copper vessel thirty inches deep, twelve inches in diameter at the top, and nine inches at the bottom. A flange is rivetted to the outside, about six inches from the bottom, so that when placed over a ring furnace, the bottom only of the vessel is exposed to the heat. The resins are melted in this pot, with as little heat as possible, so as to avoid discolouring them; if the resins employed should be difficult to melt, a little oil may be put into the pot with them. When the resin has been thus melted, the oil, previously heated nearly to its boiling point, is poured in and mixed with the melted resin; the turpentine and dryers are then added, and the varnish is subsequently strained. It should be kept for six months before being used.

Body varnish.

Mr. Davidson.

℞	Anime (pale) .	. lbvij.
	Clarified linseed oil	. lbxx.
	Spirit of turpentine	. cong. iiss.
	Sugar of lead .	. lbss.

Mix according to the above instructions.

Carriage varnish.

Mr. Davidson.

℞	Anime .	. lbvij.
	Clarified linseed oil	. lbxxiv.
	Spirit of turpentine	. cong. v.
	Sugar of lead	
	White vitriol, āā	. ℥iv.

Mix according to the above instructions.

Dutch varnish, for paper, parchment, &c.

℞	Sandarach,	
	Mastic,	
	Venice turpentine, āā .	120 parts.
	Amber . . .	30 parts.
	Linseed oil,	
	Oil of turpentine, āā .	250 parts.

Mix with heat.

Painters' varnish.

℞	Sandarach . .	120 parts.
	Mastic . . .	30 parts.
	Venice turpentine .	6 parts.
	Boiled linseed oil .	750 parts.
	Essence of turpentine .	90 parts.

Dissolve the resins by the aid of heat, then strain and expose the varnish to the sun for two days.

Printers' ink varnish.

Mr. Davidson.

The following practical instructions are given by Mr. Davidson for preparing the varnish used in making printers' ink:— The quality of printing ink depends greatly on the proper preparation of the varnish, which consists of boiled linseed oil, black or amber rosin, and spirit of turpentine. The best *clarified* oil should be used, (see page 1011,) and the pan employed for boiling it should be so set, that the fire is only applied to the bottom. Having put the oil into the pan, which should not be more than half full, apply a gentle heat at first, so as to raise the temperature to about 280° Fah.; when the oil has attained this temperature, commence adding the dryers, which consist of the best litharge and dried sulphate of zinc, in the proportions of two pounds of the former and one pound of the latter to every twenty gallons of oil. The dryers must be added gradually, at the same time moderating the heat, as the oil will froth up, and, without care, boil over. When the dryers have been all added, and the frothing has ceased, the heat must be gradually raised to about 500° Fah., at which temperature it must be kept until, on taking some of the oil out and cooling it, it is found to have the consistence of thin honey. Some judgment is required in determining when the heat should be withdrawn, which can only be acquired from experience. After withdrawing the fire, the oil should be allowed to stand for twenty-four hours, then add to every ten pounds of the oil five pounds of clear black rosin, and half a pound of spirit of turpentine.

Printing ink.

Mr. Davidson's instructions for making printing ink are, simply to mix the above varnish with lampblack. He says he has never used any other ingredients in the common ink, the whole art consisting in the proper preparation of the varnish. For the finer sorts of ink, however, Canada balsam is sometimes added in the proportion of one pound to twelve pounds of the varnish.

ENGRAVERS' VARNISH.

For winter.

1.

℞	Yellow wax	46 parts,
	Mastic	30 parts,
	Asphaltum	15 parts.

Melt them together and pour into water.

For summer.

2.

℞	Yellow wax	120 parts,
	Asphaltum	60 parts,
	Mastic,	
	Amber, āā	30 parts.

Melt them together, and pour into water.

For engraving on glass.

1.

℞	Wax	30 parts,
	Mastic	15 parts,
	Asphaltum	7 parts,
	Common turpentine	2 parts.

Mix.

2.

℞	Mastic	15 parts,
	Common turpentine	7 parts,
	Oil of spike lavender	4 parts.

Mix.

SOFT WAX FOR ENGRAVERS.

1.

℞	Suet	1 part,
	Wax	2 parts.

Mix.

2.

℞	Wax	5 parts,
	Olive oil	1 part.

Mix.

3.

℞	Wax	4 parts,
	Common turpentine	1 part.

Mix.

VENTRICULUS VITULINUS PRÆPARATUS. *Calf's stomach prepared.*

Plenck's Ph. 1804.

Let the calf's stomach, after being well washed with water, be macerated for two hours in vinegar, then, when well dried, let it be preserved.

VERATRIA. *Veratria.*

Lond. Ph. 1836.

℞	Cevadilla, bruised .	℔ij.
	Rectified spirit .	cong. iij.
	Diluted sulphuric acid,	
	Solution of ammonia,	
	Purified animal charcoal,	
	Magnesia, āā . .	q. s.

Boil the cevadilla with a gallon of the spirit for an hour in a retort to which a receiver has been fitted. Pour off the liquor, and what remains again boil with another gallon of the spirit and the spirit recently distilled, and pour off the liquor. And let that be done a third time. Press the cevadilla, and let the spirit distil from the mixed and strained liquors. What remains evaporate to the proper consistence of an extract. Boil this thrice, or oftener, in water, to which a little diluted sulphuric acid has been added, and evaporate the strained liquors to the consistence of a syrup by a gentle heat. Mix the magnesia with this, when it shall have cooled, occasionally shaking them ; then press and wash. Let the same thing be done twice or thrice ; then dry what remains, and digest in spirit with a gentle heat twice or thrice, and strain as often. Lastly, let the spirit distil. Boil the remainder for a quarter of an hour in water, to which a little sulphuric acid, and also animal charcoal, have been added, and strain. Lastly, all the charcoal being washed away, evaporate the liquors cautiously, until they acquire the consistence of a syrup, and into them drop as much ammonia as may be sufficient to throw down the veratria. Separate this, and dry.

Note. Very slightly soluble in water, more in alcohol, but most of all in sulphuric æther. It has no smell, but has a bitter taste. It is to be used with much caution.

Edin. Ph. 1841. *Veratria.*

Take any convenient quantity of cevadilla ; pour boiling water over it in a covered vessel, and let it macerate for twenty-four hours ; remove the cevadilla, squeeze it, and dry it thoroughly with a gentle heat. Beat it now in a mortar, and separate the seeds from the capsules by brisk agitation in a deep narrow vessel. Grind the seeds in a coffee-mill, and form them into a thick paste with rectified spirit. Pack this firmly in a percolator, and pass rectified spirit through it till the spirit ceases to be coloured. Concentrate the spirituous solutions by distillation so long as no deposit forms ; and pour the residuum while hot into twelve times its volume of cold water. Filter through calico, and wash the residuum on the filter so long as the washings precipitate with ammonia. Unite the filtered liquid with the washings, and add an excess of ammonia. Collect the precipitate on a filter, wash it slightly with cold water, and dry it first by imbibition with filtering-paper, and then in the vapour-bath. A small additional quantity may be got by concentrating the filtered ammoniacal fluid and allowing it to cool.

Veratria thus obtained is not pure, but sufficiently so for medical use. From this coloured substance it may be obtained white, though at considerable loss, by solution in very weak muriatic acid, decolourization with animal charcoal, and re-precipitation with ammonia.

Vinegar, (see page 607,) is employed as the menstruum for extracting the active constituents of certain spices and condiments used in cooking, and other branches of domestic economy.

Camp vinegar.

℞ Garlic, sliced	℥viij.
Cayenne pepper,	
Soy,	
Walnut catsup, āā	℥iv.
Chopped anchovies	No. 36
Vinegar	cong. j.
Cochineal	℥j.

Macerate for a month, and strain.

Currie vinegar.

℞ Currie powder	℔ss.
Vinegar	Oiv.

Macerate for fourteen days, and strain.

Raspberry vinegar. Vinaigre framboisé.

Codex.

℞ Fresh raspberries, picked from their calices	℔iij.
Good vinegar	℔ij.

Macerate in a glass vessel for a fortnight, then filter without pressing.

Other similar fruit may be used in the same way.

Rose vinegar. Vinaigre rosat.

Codex.

℞ Dried red-rose petals	℥j.
Good vinegar	℥xij.

Macerate for eight days, shaking them from time to time; then press, and filter.

VINUM ALOES. *Wine of aloes.*

Lond. Ph. 1836.

℞ Aloes, rubbed to powder	℥ij.
Canella, powdered	ʒiv.
Sherry wine	Oij.

Macerate for fourteen days, frequently shaking, and strain.

Edin. Ph. 1841.

℞ Socotorine, or East Indian aloes	℥iss.
Cardamom seeds, ground,	
Ginger, in coarse powder, āā	ʒiss.
Sherry	Oij.

Digest for seven days, and strain through linen or calico.

Dubl. Ph. 1826.

℞ Socotorine aloes	℥iv.
Canella bark	℥j.
Spanish white wine	Oiij.
Proof spirit	Oj.

Mix together the aloes and canella, previously powdered, separately, and pour on them the wine mixed with the spirit; then macerate for fourteen days, frequently shaking the vessel; and, lastly, filter the liquor.

VINUM CINCHONÆ. *Vin de quinquina. Cinchona wine.*

Codex.

℞ Cinchona bark (pale)	64 parts.
Proof spirit	125 „
Good red wine (French)	1000 „

Bruise the bark; add to it the spirit, and let them macerate for twenty-four hours; then add the wine; macerate for eight days, shaking it from time to time, and strain, press, and filter.

VINUM COLCHICI. *Wine of meadow saffron.*

Lond. Ph. 1836.

℞	Meadow saffron cormus, dried, sliced	℥viij.
	Sherry wine	Oij.

Macerate for fourteen days, and strain.

Edin. Ph. 1841.

℞	Colchicum-bulb, dried and sliced	℥viij.
	Sherry	Oij.

Digest for seven days, strain, express strongly the residuum, and filter the liquors.

VINUM COLCHICI SEMINIS. *Wine of colchicum seeds.*

U. S. Ph. 1840.

℞	Colchicum seeds, bruised	℥iv.
	Wine (sherry)	Oij.

Macerate for fourteen days, with occasional agitation, then express and filter through paper.

VINUM ERGOTÆ. *Wine of ergot of rye.*

U. S. Ph. 1840.

℞	Ergot, bruised	℥ij.
	Wine (sherry)	Oj.

Macerate for fourteen days, with occasional agitation, then express, and filter through paper.

VINUM GENTIANÆ. *Wine of gentian.*

Edin. Ph. 1841.

℞	Gentian, in coarse powder	℥ss.
	Yellow bark, in coarse powder	℥j.
	Bitter orange-peel, dried and sliced	ʒij.
	Canella, in coarse powder	ʒj.
	Proof spirit	f℥ivss.
	Sherry	Oj & f℥xvi.

Digest the root and barks for twenty-four hours in the spirit; add the wine, and digest for seven days more; strain and express the residuum strongly, and filter the liquors.

VINUM IPECACUANHÆ. *Wine of ipecacuanha.*

Lond. Ph. 1836.

℞	Ipecacuanha, bruised	℥iiss.
	Sherry wine	Oij.

Macerate for fourteen days, and strain.

Edin. Ph. 1841.

℞	Ipecacuan, in moderately fine powder	℥iiss.
	Sherry	Oj

Digest for seven days, and then filter.

Dubl. Ph. 1826.

℞	Root of ipecacuan, bruised	ʒij.
	Spanish white wine	Oij.

Macerate for fourteen days, and filter.

VINUM OPIATUM, commonly called *Rousseau's laudanum.*

Ratier and Henry's Ph. Fran.

℞ White honey, 5670 Tr. grains, or	375 parts,
Hot water, 17011·5 Tr. gr., or	1500 parts,

Pour the mixture, when melted, into a mattrass, and put it in a warm place. As soon as it begins to ferment add

Pure opium, 1890 Tr. gr., or	128 parts,
Previously dissolved in 5670 Tr. gr. of water, or	384 parts.

Let the whole ferment for a month in a place, the temperature of which should be 86° F.

Then strain and filter the liquor, and evaporate until only 4725 Tr. gr. remains, or	320 parts,

Next strain, and add of

Alcohol (D. 923 to 867) 2126·25 Tr. gr., or	144 parts.

Preserve in a well-stopped vessel.

VINUM OPII. *Wine of opium.*

Lond. Ph. 1836.

℞ Purified extract of opium	℥iiss.
Cinnamon, bruised,	
Cloves, bruised, āā	ʒiiss.
Sherry wine	Oij.

Macerate for fourteen days, and strain.

Edin. Ph. 1841.

℞ Opium	℥iij.
Cinnamon, in moderately fine powder,	
Cloves, bruised, āā	ʒiiss.
Sherry	Oij.

Digest for seven days, and then filter.

Dubl. Ph. 1826.

℞ Turkey opium	℥j.
Cinnamon bark, bruised,	
Cloves, bruised, āā	ʒss.
Spanish white wine	Oj.

Macerate eight days, and filter.

VINUM QUINÆ, *Quinine wine.*

Dr. Collier.

℞ Disulphate of quina	gtt. xxiv.
Citric acid	gtt. xviij.
Genuine orange wine	f℥xxiv. Dissolve.

Dose. A dram-glassful or more.

VINUM RHEI. *Rhubarb wine.*

Edin. Ph. 1841.

℞ Rhubarb, in coarse powder	℥v.
Canella, in coarse powder	ʒij.
Proof spirit	f℥v.
Sherry	Oj & f℥xv.

Digest for seven days, strain, express strongly the residuum, and filter the liquors.

VINUM TABACI. *Wine of tobacco.*

Edin. Ph. 1841.

℞	Tobacco	℥iiss.
	Sherry	Oij.

Digest for seven days, strain, express strongly the residuum, and filter the liquors.

VINUM VERATRI. *Wine of white hellebore.*

Lond. Ph. 1836.

℞	White hellebore, sliced	℥viij.
	Sherry wine	Oij.

Macerate for 14 days, and strain.

WAFERS. *Flour wafers. For sealing letters, &c.*

Mix fine flour into a smooth pulp with water, add red-lead, dichromate of lead, or other colouring matter, to give the required colour, pass the mixture through a sieve, pour some of it into the *wafer-irons*, previously warmed and greased, then having closed the irons, expose them to the gentle heat of a charcoal fire until the wafer is dried. The small wafers are subsequently cut out of this large sheet with a steel punch.

Gelatine wafers.

℞	Best glue or gelatine	lbj.
	White sugar	℥j.
	Water	q. s.

Dissolve with heat; colour it with prepared cochineal, French berries, saffron, turmeric, indigo, or other colouring matter; run it out in a thin layer over a glass or metallic slab, slightly oiled, and when cold, cut it with a punch, or stamp it with an impression.

WAFER-PAPER.

This is an article of confectionary, which has been recently applied to pharmaceutical use.

Mix very fine wheat flour into a thin batter with milk, or a mixture of cream and water; add a little white wine and sugar; so as to make the mixture about the consistence of syrup; put some of the mixture into the *wafer-irons*, previously warmed and oiled, and expose them to the gentle heat of a charcoal fire for a few minutes, or until the wafer is dry.

The *wafer-irons* consist of two plates of iron, united like a pincers or pair of tongs, and, when brought together, having a space between their opposed surfaces suitable for the thickness of the wafers.

These wafers are used for administering nauseous medicines, such as powders or electuaries; the wafer being moistened with water and the medicine enveloped in it.

WINES, BRITISH.

The following is the process adopted in making wine from the fruits of this country:—

The fruit should be gathered when ripe, and, if possible, in dry weather; it should be picked over, to remove stalks, &c., and to reject any that is unsound. It is then well bruised in a tub or other suitable vessel, put into a vat with the specified quantity of water, and allowed to macerate for about 24 hours, being stirred up from time to time. At the expiration of this time, the liquid is drawn off, and the fruit pressed in hair bags. The *must* is now to be boiled for a few minutes, and skimmed; the sugar is then to be added and cream of tartar, if ordered, and when the liquor has cooled to about 75° Fahr., it is to be put into the cask, together with the yeast, and left in a moderately warm quiet place to ferment. When the fermentation has commenced, any ingredients used merely for flavouring it, should be added. The process of fermentation usually occupies from 14 to 20 days, at the expiration of which time, the spirit is to be added, and the wine bunged up and left for about three months, when it may be bottled for use;—or it may be bottled when the spirit is added, and kept for three months before being used.

The foregoing process is to be adopted with the following wines, excepting where otherwise directed:—

Currant wine.

1.

℞	Red currants .	70 lbs
	Brown sugar .	10 lbs.
	Water, sufficient to make	15 gallons.
	Brandy . .	2 bottles.

Made according to directions above.

2.

℞	White currants, Red currants, āā .	40 lbs.
	Water, q. s. for .	15 gallons.
	Brown sugar .	10 lbs.
	Brandy . .	2 bottles.

Made according to directions above.

3.

℞	Black currants .	70 lbs.
	Brown sugar .	10 lbs.
	Water, q. s. for .	15 gallons.
	Brandy . .	2 bottles.

Made according to directions above.

Cherry wine.

℞	Cherries . .	70 lbs.
	Brown sugar .	10 lbs.
	Water, q. s. for .	15 gallons.
	Brandy . .	2 bottles.

Made according to directions above.

Cider.

The juice of apples, obtained by pressure, fermented at a temperature of about 60°. Fah. The quality of the cider depends on the kind of apples used, and the manner in which the fermentation is conducted.

Champagne, British.

℞	Brown sugar .	10 lbs.
	White sugar . .	12 lbs.
	Water . .	9 gallons.
	Tartaric acid .	ʒvj.

Dissolve; heat the liquor to 75°; add yeast, and when the fermentation has commenced,

Perry . .	1 gallon.
Brandy . .	Oiij.

Bottle it before the fermentation has ceased.

Cowslip wine.

℞	White sugar .	21 lbs.
	Water . .	7 gallons.

Dissolve it, set it to ferment, then add

Cowslip flowers, picked	7 gallons.
Seville oranges, sliced	No. 12.
Brandy . . .	1 bottle.

Proceed according to directions above.

Elder wine.

℞ Elder berries	12 gallons.
Boiling water	8 gallons.
Sugar	40 lbs.
Cloves	℥iv.
Ginger	℥xij.
Brandy	2 bottles.

Made according to directions at p. 1019.

Ginger wine.

℞ Sugar	12 lbs.
Water	3½ gallons.
Ginger	℥iv.

Boil them together for half an hour; when cooled to 75°, add the rinds of six lemons, and some good yeast; let it ferment for 10 or 14 days, then add a pint of brandy, and bottle it for use.

Gooseberry wine.

℞ Gooseberries	70 lbs.
Brown sugar	10 lbs.
Water, q. s. for	15 gallons.
Brandy	2 bottles.

Made according to directions at p. 1019.

Grape wine.

℞ Grapes	70 lbs.
Sugar	10 lbs.
Water, q. s. for	15 gallons,
Brandy	2 bottles.

Made according to directions at p. 1019.

Lemon wine.

℞ Raisins	2 lbs.
Brown sugar	2 lbs.
Water	2 gallons,
Lemons, sliced	No. 4.

Made according to directions at p. 1019.

Orange wine.

℞ Juice of 100 Seville oranges,	
Outside rind of 50 Seville oranges,	
White sugar	23 lbs.
Water	10 gallons,
Brandy	2 bottles.

Made according to directions at p. 1019.

Poppy wine. Post.

This is made by fermenting poppy capsules with sugar, in the same way as the other wines above described. It is said to be used in India, and to be highly intoxicating and narcotic.

Perry.

The juice of pears, obtained by pressure, fermented at a temperature of about 60° Fahr., the same process being adopted as that for making cider.

Raisin wine.

℞ Malaga raisins	8 lbs.
Water	1 gallon.

Boil together, and proceed according to the directions at p. 1019.

XYLOIDINE.

A highly combustible body obtained by dissolving starch in strong nitric acid, sp. gr. 1·5, with the aid of a gentle heat, and then adding water, which precipitates the xyliodine in the form of a white powder. A substance possessing similar properties is obtained on immersing white paper in nitric acid of the above density, for five or ten minutes, and then washing it with water and drying it. These substances burn rapidly with a yellowish-white flame, but are not explosive.

GUN-COTTON, was at first supposed to be identical in composition with xyloidine. It is obtained by a similar process, cotton being substituted for paper or starch. If clean carded cotton be immersed for two or three minutes in a large quantity of the strongest nitric acid, sp. gr. 1·52, then well washed in water, and dried by the heat of a water-bath, it will be converted into *gun-cotton.* The following, however, is the best process for making it:–

Mix 2 parts of nitric acid, sp. gr. 1·5, and 1 part of oil of vitriol, sp. gr. 1·845; immerse clean and dry carded cotton in the mixture for two minutes, then take it out, press it (to remove adhering acid), wash it in a current of water until all free acid is removed, and dry it by the heat of a water-bath.

Gun-cotton thus prepared is highly explosive, igniting at a temperature a little above 212° Fahr. It is supposed to consist of the elements of the cotton together with those of nitric acid, but an accurate analysis of it has not yet been made.

YEAST. *Ferment.*

An azotised substance formed during the process of fermentation, and capable of inducing fermentation in saccharine solutions.

ARTIFICIAL YEAST.

1.

Fownes.

Mix wheat flour into a thick paste with water; keep it slightly covered in a moderately warm place; in about three days it begins to emit a little gas, and to exhale a disagreeable, sour odour; after two or three days more the smell changes, and is accompanied by a distinct vinous odour; it is now in a state fit for exciting vinous fermentation.

2.

℞	Honey	℥v.
	Cream of tartar	℥j.
	Malt	℥xvj.
	Water, at 122° Fahr. . . .	Oiij.

Stir well together, and allow the whole to rest for two or three hours, or until the temperature sinks to 65° Fahr., at which it must be kept covered over, until fermentation takes place and yeast is formed.

3.

Boil 4 ounces of bean flour in 6 quarts of water for half an hour; mix the decoction with 3½ pounds of wheat flour; when the temperature is at 55° Fahr. add 2 quarts of beer yeast, mix them well together, and keep the mixture at the above temperaturo until it ferments. When fermentation has continued for twenty-four hours, add 7 pounds of barley or bean flour, make it into a uniform dough by kneading it, roll it out as thin as a dollar, and cut it with the top of a wineglass into small cakes, which are to be placed on a seive and dried in the sun. These may be kept in a dry place, and used when required.

For use. Mix one of the cakes with warm water, and set it in a warm place for twelve hours, when it may be used as yeast.

ZAFFRE.

Cobalt ore, deprived of sulphur and part of the arsenic by roasting, then ground to fine powder, and mixed with siliceous or quartzose sand. It is chiefly imported from Saxony. It s largely used in Staffordshire and elsewhere for making the blue colour employed for painting on porcelain, and in enamels.

ZINCUM. *Zinc.* *Symb.* Zn. *Equiv.* 32.

A white or bluish white metal, occurring in nature in the state of oxide, carbonate, and sulphuret. It is obtained from one or other of these compounds. Its sp. gr. is 6·8 to 7·2. It melts at 773° ; at a temperature of 600°, it is so brittle as to admit of being easily powdered. *Powdered* or *granulated zinc*, is obtained by rubbing it in a mortar when at the last-named temperature.

ZINCI ACETAS. *Acetate of zinc.*

U. S. Ph. 1840.

℞	Acetate of lead . . .	lbj.
	Zinc, granulated . . .	℥ix.
	Distilled water	Oiij.

Dissolve the acetate of lead in the water and filter ; add the zinc to the solution, and agitate them occasionally together in a stopped bottle for five or six hours, or until the liquid yields no precipitate with a solution of iodide of potassium. Filter the liquor ; evaporate it with a moderate heat to one-fifth, and set it aside to crystallize. Pour off the liquid and dry the crystals on bibulous paper. Should the crystals be coloured, dissolve them in distilled water, and having heated the solution, drop into it while hot a filtered solution of chlorinated lime, until it ceases to let fall susquioxide of iron ; then filter the liquor ; acidulate it with a few drops of acetic acid, evaporate and crystallize.

ZINCI CARBONAS. *Carbonate of zinc.*

℞	Sulphate of zinc, caystallized . .	℥viij.
	Carbonate of soda, crystallized . .	℥ix.
	Water	q. s.

Dissolve the two salts separately in water, mix the solutions, boil the mixture, and collect ; wash and dry the precipitate.

ZINCI CHLORIDUM. *Chloride of zinc.*

Dissolve purified zinc in pure hydrochloric acid, filter the solution through asbestos, and evaporate it in a flask or other similar vessel until it concretes, increase the heat until the salt fuses ; pour it on to a clean cold slab, and as soon as it has become hard, break it into pieces and put it into a well-closed bottle.

Med. use. A powerful caustic.

ZINCI CYANIDUM. *Cyanide of zinc.*

Codex.

Dissolve sulphate of zinc in water, and add to it a solution of cyanide of potassium as long as a precipitate is formed, stirring the mixture constantly with a rod. Collect, wash, and carefully dry the precipitate.

Dose. Quarter of a grain.

ZINCI FERROCYANIDUM. *Ferrocyanide of zinc.*

Add a solution of ferrocyanide of iron to solution of sulphate of zinc, and collect, wash, and dry the precipitate.

Dose. Half a grain to one grain.

ZINCI IODIDUM. *Iodide of zinc.*

Made in the same way as iodide of iron, substituting zinc for iron.

ZINCI LACTAS. *Lactate of zinc.*

Made in the same way as lactate of iron, substituting zinc for iron.

ZINCI OXYDUM. *Oxide of zinc.*

Lond. Ph. 1836.

℞ Sulphate of zinc . . lbj.
Sesquicarbonate of ammonia ℥viss.
Distilled water , . Oiij.

Dissolve the sulphate of zinc and sesquicarbonate of ammonia, separately, in twelve pints of the distilled water, and strain; then mix. Wash what is precipitated frequently with water; and lastly, burn it for two hours in a strong fire.

Edin. Ph. 1841.

℞ Sulphate of zinc . . ℥xij.
Carbonate of ammonia . ℥vj.

Dissolve each in two pints of water; mix the solutions; collect the precipitate on a filter of linen or calico; wash it thoroughly; squeeze and dry it, and expose it for two hours to a red heat.

Note. White, tasteless, entirely soluble in diluted nitric acid without effervescence; this solution is not affected by nitrate of baryta, but gives with ammonia a white precipitate entirely soluble in an excess of the test.

Dubl. Ph. 1826.

Take of zinc broken in small fragments, any required quantity.

Let portions of the metal be thrown at separate intervals of time into a crucible heated to whiteness and of a sufficient depth; its mouth inclining somewhat toward the door of the furnace: and after the injection of each piece of zinc, let another crucible be inverted over that which receives the metal, but loosely, that the air may not be excluded: let the sublimed light powder and the whitest part of it be preserved for use.

Use. Externally, in preparing the oxide of zinc ointment. Internally, as a tonic in epilepsy, chorea, and hooping-cough.

ZINCI SULPHAS. *Sulphate of zinc.*

Lond. Ph. 1826.

℞ Zinc, in small pieces . . ℥v.
Diluted sulphuric acid . Oij.

Pour gradually the diluted sulphuric acid upon the pieces of zinc, and the effervescence being finished, strain the liquor; then boil it down until a pellicle begins to form. Lastly, set it aside that crystals may be formed.

Edin. Ph. 1841.

This salt may be prepared either by dissolving fragments of zinc in diluted sulphuric acid till a neutral liquid be obtained, filtering the solution, and concentrating sufficiently for it to crystallize on cooling,—or by repeatedly dissolving and crystallizing the impure sulphate of zinc of commerce, until the product when

Note. Totally dissolved by water. What is thrown down by ammonia is white, and when the ammonia is added in excess, it is again dissolved. On the addition of chloride of barium or acetate of lead they are decomposed.

dissolved in water, does not yield a black precipitate with tincture of galls, and corresponds with the characters laid down for sulphate of zinc in the List of the Materia Medica; and exhibited in the note immediately following.

Note. When a solution in six waters is boiled with a little nitric acid, and solution of ammonia is then added till the oxide of zinc first thrown down is all re-dissolved, no yellow precipitate remains, or a trace only, and the solution is colourless.

Lond. Ph. 1836.

℞	Zinc in small fragments . .	13 parts.
	Sulphuric acid . . .	20 „
	Water	123 „

On the zinc passed into a glass vessel, gradually pour the acid previously diluted with water; when the effervescence has ceased, digest the mixture for some time, then let the filtered liquor evaporate, and after the requisite evaporation, set it aside that crystals may form.

Uses. Internally, tonic and astringent. *Dose,* gr. j. to gr. ij, which may be gradually raised to gr. v; as an emetic in the dose of from gr. x to gr. xxx. Externally, as an astringent in the proportion of gr. x to eight fluidounces of water.

ZINCI VALERIANAS. *Valerianate of zinc.*

Add hydrated oxide of zinc to diluted valerianic acid until the latter is neutralized; then slowly evaporate the solution, and preserve the salt in well-stopped bottles.

MARKING INK, for marking linen, &c., *without the use of a mordant.*

The following formula is recommended in preference to that inserted at page 816:—

℞	Nitrate of silver . . .	℥j.
	Carbonate of soda, crystallized .	℥iss.
	Tartaric acid	ʒij. ℈ij.
	Strong liquor ammoniæ . .	f℥ij, or q. s.
	Archil	f℥ss.
	White sugar	ʒvj.
	Powdered gum arabic . . .	ʒx.
	Distilled water	q. s.

Dissolve the nitrate of silver and carbonate of soda separately in distilled water; mix the solutions; collect and wash the precipitate on a filter; introduce the washed precipitate, still moist, into a wedgwood mortar, and add to it the tartaric acid, rubbing them together until effervescence has ceased: add *Liquor ammoniæ* in sufficient quantity to dissolve the tartrate of silver; then mix in the archil, white sugar, and powdered gum arabic, and add as much distilled water, if required, as will make f℥vj. of the mixture.

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